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ABSTRACT

This description of an inservice training program in basic microcomputer literacy for college faculty and staff at Ferris State College (Michigan) details the follow-up evaluation used to identify the merit and worth of the training. The report presents both the format and subject matter of the training, which consisted of three 3-hour workshops with hands-on experience in the computer lab, and the results of the survey. A 21-item bibliography is provided. The appendices, which make up more than half of the document, contain copies of the survey cover letter and the questionnaire as well as information on available "freeware" or "shareware" and instructions for using three software programs--ExpressCalc, PC-Write, and PC-File. (EW)

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A Follow-Up Study on the Inservice Training in Basic Microcomputer Literacy at Ferris State College

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EDU 546

November 1987

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A Follow-Up Study on the Inservice Training in Basic Microcomputer Literacy at Ferris State College

ABSTRACT

Training college faculty and staff to use microcomputers is a major challenge at most institutions. The purpose of this study is to follow-up on participants of the inservice training in basic microcomputer literacy at Ferris State College in order to identify the merit and worth of the training. The subject matter content and format of the training is presented along with the results of the survey.

KEYWORDS

Microcomputers, college faculty, college staff, inservice training, workshops, computer literacy.

CHAPTER 1

INTRODUCTION

New technology has invaded North American colleges and universities. In an attempt to increase office productivity and to educate students with marketable skills, microcomputers have sprung up on campuses across the United States. The training of faculty and staff in the use of this equipment has presented a major challenge to most educational institutions.

BACKGROUND

Microcomputers began to appear on the desks of Ferris State College office support staff in 1981. Gradually these machines found their way to some faculty offices and student labs. The initial computer support provided to new users was extremely limited. Essentially it consisted of unpacking the boxes, hooking up the cables, and plugging the components into the power supply. The user was left with an operating system manual and a sense of frustration.

In an attempt to provide some direction in the acquisition and implementation of microcomputers on campus, the Office of Academic Computing was organized in January 1982. The office consisted of a director who allocated 20% of his time to academic computing and 80% of his time to institutional planning. His formal training was in engineering, statistics, and business management.

In June 1984, a faculty member was added to the staff on a part-time basis. He continued to teach legal assisting classes in the School of Business in addition to his academic computing duties. His background included undergraduate work in marketing and a degree in law.

The first full-time employee and six hundred square feet of floor space were acquired in January 1985. This staff member had a liberal arts background. Her formal training was in foreign language and social sciences.

The 1.7 employees began the task of setting up an office: purchasing furniture, acquiring telephone lines, selecting and installing computer hardware for a training lab, and reviewing software. Campus computer needs were identified and certain guidelines and standards were established.

Because the academic computing staff was small, it was determined that only one family of microcomputers could be supported. As Ferris was in the business of educating students for the business world, it was decided that IBM-PC compatible microcomputers would be used to the exclusion of all others.

Budgetary constraints made it difficult for many offices to purchase software. Also, software piracy was a major concern. The office decided to identify quality public domain or freeware/shareware programs and to offer training in these applications whenever feasible.

A basic microcomputer literacy workshop was designed by the staff and pilot offerings began in May 1985. The format and training materials were then refined. In July 1985, the part-time faculty member was allocated to the Office of Academic Computing on a full-time basis. With a staff of 2.2 employees, it became possible to offer more workshops.

From 7/1/85 through 6/30/87, 246 faculty and staff participated in the basic microcomputer literacy workshops. Evaluations at the conclusion of each of the workshops were extremely positive.

STATEMENT OF THE PROBLEM SITUATION

Even though written evaluations and verbal feedback were extremely positive, the Office of Academic Computing had no data as to the overall effectiveness of these workshops. Therefore, a follow-up study on participants of the inservice training in basic microcomputer literacy at Ferris State College was needed.

PURPOSE OF THE STUDY

The follow-up study was designed to identify the merit and worth of the basic microcomputer literacy workshop offered to Ferris faculty and staff between 7/1/85 and 6/30/87. Upon completion of the study, suggestions would be made for the improvement of this workshop. Recommendations for future microcomputer training for campus personnel would also be proposed. As the Office of Academic Computing must

determine how its limited resources can best meet college faculty needs, the results of the study will assist in budgetary planning as well.

The study will aid other educators in designing and implementing basic microcomputer literacy training. The workshop sessions are outlined in the report and the appendices contain samples of exercises used.

QUESTIONS TO BE ANSWERED

This follow-up study is nonexperimental, descriptive research. The questions to be answered are:

1. What are the demographic characteristics of workshop participants?
2. Were the participants satisfied with the inservice training?
3. To what extent did participants make use of their training?
4. Is there a relationship between self-reported satisfaction with the workshop and the use of a microcomputer?
5. What was the relative value of the software packages taught in the workshop?
6. What aspects of the workshop did the participants feel were the most helpful?
7. What improvements can be made for future basic microcomputer literacy inservice training?

8. What services offered by the Office of Academic Computing are used by the workshop participants?

DEFINITION OF TERMS

When analyzing the eight stated research questions, the following terms need to be defined:

1. Participants - Ferris faculty, staff and administration who took a basic microcomputer literacy workshop offered by the Office of Academic Computing
2. Inservice training - the basic microcomputer literacy workshop offered by the Office of Academic Computing to Ferris employees free of charge during work hours
3. Training - the material covered in the basic microcomputer literacy workshop
4. Software packages - ExpressCalc (or PC-Calc), PC-Write, and PC-File (or PC-File+) were used for the training
5. Office of Academic Computing - office at Ferris State College which was created to offer microcomputer support to campus faculty members

SCOPE AND DELIMITATIONS OF THE STUDY

The researcher is working only with Ferris State College employees who took the basic microcomputer literacy workshop from the Office of Academic Computing between 7/1/85 and

6/30/87. Questionnaires were sent to all participants who remained employed on campus as of 9/21/87. Findings should be examined with these limitations in mind.

ASSUMPTIONS

The following assumptions were made with respect to this study:

1. Respondents would answer questionnaire items accurately.
2. Participants not responding to the survey would have responded in a fashion similar to those who did respond.

CHAPTER 2

LITERATURE REVIEW

According to Iwler and Ferrero, "computer literacy is essential for all persons if they are to function competently in our information based society" (p.1). They further contend that "research on use of computers in schools is relatively scarce because the large scale use of microcomputers is a recent event" (p.1).

M. Johnson, Director of Academic Computing at the University of Iowa, defines the new technology as a triad:

> This new technology presents education with two challenges. It affects what we learn and how we learn. If during the last thirty years the auto industry had made the same progress as the computer industry, a Rolls Royce would cost $2.50 and get 2,000,000 miles per gallon. Costs and size are falling, and energy requirements are diminishing. The new technology is here and being used. It changes skills required in the post-school world; old skills are obsolete and new skills are needed. The new information technology cannot be ignored (pp.17-18).

Jalbert contends that one population of subjects is being overlooked or ignored by researchers investigating the effectiveness and impact of computers.

> This population is the teaching professoriate, which includes those large numbers of professors in

> postsecondary institutions who are engaged primarily in the task of teaching and who can be distinguished from the research professoriate whose primary task is research and publication. The teaching professoriate is in a position to educate and influence generations of future students. The extent to which these professors accept computers, master computers, encourage computer mastery in their students, use computers in their classes, etc. will have a marked influence on the institution's and educational system's transition into a technological future (p. 6).

In 1981, D. G. Rawitsch wrote about the problems of teaching educators about computing. He feels that "as computers are introduced into education, where the majority of users do not have backgrounds in the field of computing, we may soon be saying that 'training' is the most important of all" (p. 31).

A computer search was executed to locate research relevant to this project. The keywords used in the search were: inservice-education, inservice-teacher-training, workshops, inservice-education or inservice-teacher-training or workshops, microcomputer, computer-literacy, computer-oriented-programs, microcomputer or computer-literacy or computer-oriented-programs. The search produced a listing of 178 articles. After reviewing the abstracts of these articles, nineteen were read in entirety. These studies lent support

to the need, the basic design structure, and teaching approach of the Office of Academic Computing workshops.

Microcomputer training similar to that provided at Ferris has been offered at many sites. The following authors and their locations are included among the readings listed in the consulted works:

Tim Jay	North Adams State College
Marsha Young	Rochester Institute of Technology
Ann B. Kapp and Addie H. Knickerbocker	Northeast Louisiana University
Irwin Iwler and Grace Ferrero	Pittsburg University
Mark Peel	State University of New York Agricultural & Technical College
Hugh McHenry and Stan Franklin	Memphis State University
Reg Nordman	University of Victoria

Some of the studies included evaluations completed by faculty and staff who indicated that microcomputer inservice training is valuable. Readings which included participant evaluations of workshops are:

Cathleen A. Norris and D. Barry Lumsden	North Texas State University
Irwin Iwler and Grace Ferrero	Pittsburg University
Mark Peel	State University of New York
Hugh McHenry and Stan Franklin	Memphis State University
Reg Nordman	University of Victoria

Although some of the above readings included participants' evaluations of the workshops, little research

has been done to follow-up on the effectiveness of this training. Anne Stewart received replies from 40 of the 55 colleges which she surveyed within the League for Innovation in the Community College. These questionnaires, however, were completed by managers and not by the participants themselves.

The literature review tends to provide an evaluation of the workshops rather than an evaluation as to the end result of the training. The literature review does support the design of the basic microcomputer literacy workshop offered by the Office of Academic Computing. A description of this design follows.

CHAPTER 3

DESIGN OF THE BASIC MICROCOMPUTER LITERACY WORKSHOP

Many definitions of computer literacy have been proposed. The definition of microcomputer literacy as defined for the workshop offered at Ferris State College included the following elements:

1. A conceptual understanding of the component parts of a computer system and how they interact, and being able to correctly use common computer terminology
2. A conceptual understanding of what computer software is and the process involved in creating an elementary computer program
3. Being able to productively use several software packages; including a word processing program, an electronic spreadsheet, and a data base manager
4. Understanding some of the social, ethical, and educational issues brought about by the advent of computers into society

The sessions covered the following topics:

SESSION I - 3 hours

I. Hardware/software lecture using Storyboard presentation

II. Break - 15 min.

III. Care and handling of diskettes

IV. Differences in a computer keyboard and a typewriter keyboard

V. Preparing the machine for use

VI. Basic operating system commands

VII. Hands-on lab time: formatting disks and copying files

VIII. Introduction to electronic spreadsheets

XI. Hands-on lab time for ExpressCalc exercise

SESSION II - 3 hours

I. Review of often-used operating system commands

II. Introduction to word processing

III. Break - 15 min.

IV. Hands-on lab time for PC-Write exercise

V. Assistance with individual projects

SESSION III - 3 hours

I. Viewing read-me files and printing documentation

II. Introduction to data bases

III. Break - 15 min.

IV. Hands-on lab time for PC-File exercise

V. Assistance with individual projects

The programs were presented in a spreadsheet, word processing, data base sequence. Spreadsheets were introduced first as these concepts are the easiest to understand. Anyone having experience with a columnar ledger sheet can apply the same principles to an electronic spreadsheet. Word processing was introduced next. The myriad of functions available in a word processor can be overwhelming even to those who use a typewriter extensively. As database concepts are unfamiliar

to noncomputer users, the data base manager was the final program demonstrated.

The workshop was offered free of charge during normal office hours. Ferris employees were eligible to attend. In most cases, attendance was voluntary. However, some participants received directives from supervisors to participate in the workshop. Upon request, CEU credits were awarded through the Gerholz Institute of Lifelong Learning.

The workshop met for three 3-hour sessions. Some workshops met for three consecutive days. Other workshops met once a week for three weeks. In some cases, participants' schedules could not accommodate a three-hour block of time. Therefore, occasionally a workshop met for four 2-hour sessions. This format, however, did not work as well.

The workshops were presented in an informal, non-threatening atmosphere. Coffee was provided. The two instructors had classroom teaching experience but no formal computer training. They were to serve as models that microcomputer expertise is at the hands of all.

The lecture/demonstration portion of the workshop was conducted around a conference table to minimize the teacher/student roles. Two large color monitors allowed for comfortable viewing of the computer screen. The initial presentation lasted 1-1/4 hours using as little computer jargon as possible. A break ensued and then participants went to the lab. Workstations were located away from the conference table. When participants had access to keyboards during the

lecture/demonstration, individuals would begin experimenting with the software rather than watching the presentation.

As eight workstations were available in the lab, the workshop was limited to eight. To maximize the learning experience, it was deemed essential that only one person be assigned to a machine. To lessen frustration and to provide encouragement, a ratio of four students to one instructor was maintained in the lab. Thus, assistance and feedback were available immediately.

Diskettes for three applications programs and one disk for data files were distributed to each participant at the beginning of the workshop. The software taught was ExpressCalc (or PC-Calc), PC-Write, and PC-File (or PC-File+). Because the programs were shareware, participants could leave the workshop with the software and continue using the programs in the office or at home.

In-house prepared training materials and step-by-step exercises for elementary operating system commands and for the three programs were given to the participants. These materials are included in the appendices of this report. The exercises were demonstrated to the class before the participants executed them in the lab.

The mix of administrators, faculty, and staff worked well. Good interaction occurred between participants and instructors as well as between participants and participants. There was a valuable exchange of ideas between departments and services.

The participants often arrived before the session started. Many stayed after the stated finish time in order to work in the lab or to ask questions. Upon request, intermediate or advanced exercises were distributed.

Evaluations for the workshop were consistently positive. Participants often put their names on wait lists for additional workshop offerings.

CHAPTER 4

RESEARCH METHODOLOGY

This follow-up study is nonexperimental, descriptive research. Each of the stated research questions was carefully considered when constructing the survey instrument.

RESEARCH DESIGN AND INSTRUMENTATION

The research questions to be answered are:

1. What are the demographic characteristics of workshop participants?

2. Were the participants satisfied with the inservice training?

3. To what extent did participants make use of their training?

4. Is there a relationship between self-reported satisfaction with the workshop and the use of a microcomputer?

5. What was the relative value of the software packages taught in the workshop?

6. What aspects of the workshop did the participants feel were the most helpful?

7. What improvements can be made for future basic microcomputer literacy inservice training?

8. What services offered by the Office of Academic Computing are used by the workshop participants?

A questionnaire was developed to solicit answers to the eight questions stated above. Items 1 through 8 on the

questionnaire were designed to identify the demographic characteristics of workshop participants (research question #1). Item 9 was included on the questionnaire to answer research question #2, satisfaction with inservice training. Research question #3, the extent of participant use of training, was addressed by items 10-13 of the questionnaire. Self-reported satisfaction with the workshop and the use of a microcomputer, question #4, would be identified by a cross tabulation of items 9 and 11. Research question #5, relative value of software packages taught, would be analyzed through the responses to item 14 on the survey. The most helpful aspects of the workshop (research question #6) would be listed by the respondents in item 15. Improvements for future basic microcomputer literacy inservice training (research question #7) would be indicated in item 17. The final research question concerning services used, #8, would be identified by the responses cited in item 16.

The questionnaire was reviewed by educators with degrees in research, marketing, and statistics to evaluate its soundness. It was then field tested on fifteen individuals. These individuals were participants in a basic microcomputer literacy workshop after 6/30/87, or they were Ferris faculty who had used the Office of Academic Computing basic microcomputer literacy training materials in their classes.

The questionnaire was one sheet in length, two pages back to back. A short design format was used to encourage

response. The questionnaire was laser printed to increase legibility and to give a professional appearance. Yellow paper was selected to enhance visibility. A copy of the questionnaire is included in the appendices of this report.

SELECTION OF SUBJECTS

The Office of Academic Computing maintains a database of participants of all workshops. Between 7/1/85 and 6/30/87, 246 employees of Ferris State College took the basic microcomputer literacy workshop. On 9/21/87, 233 of those participants remained employed on the Ferris campus. These 233 participants are the subjects of this study.

FIELD PROCEDURES

A letter was sent to the Vice President for Academic Affairs at Ferris State College requesting permission to survey the identified subjects. Permission was granted.

A cover letter was written, laser printed, and mail merged to each of the participants giving the survey a personal touch. The cover letter and questionnaire were sent to the subjects at their campus addresses during the second scheduled full week of fall quarter classes on 9/21/87. A return date of 10/7/87 was requested for the completed questionnaire. An addressed envelope was enclosed for added convenience. Anonymity was assured. A sample cover letter is included in the appendices of this report.

DATA COLLECTION

Many completed questionnaires were returned on the day following the mailing. By the deadline date, 161 completed questionnaires (69% response rate) had been received. This is an acceptable return rate for this type of survey. Because the Ferris faculty had been involved in a strike during the first week of fall quarter classes and the work environment was more chaotic than usual, it was decided not to send follow-up letters in an attempt to obtain additional completed questionnaires.

DATA PROCESSING AND ANALYSIS

Responses were recorded and tabulated on a Lotus 1-2-3 electronic spreadsheet. Cross tabulations were made using the Reflex data analysis program. The results of the analyses are presented in the following chapter.

CHAPTER 5

RESEARCH FINDINGS

Of the 233 questionnaires mailed, 161 were completed and returned by the due date. This return rate of 69% is acceptable for this type of survey. Fred Swartz, Coordinator of Testing at Ferris, indicated that a typical faculty/staff response rate to campus surveys varies from 40% to 70% with follow-up reminders. Surveys initiated by the college president generally have an 80% response rate after two follow-up reminders.

Upon receipt of the completed questionnaires, responses were tabulated on a Lotus 1-2-3 electronic spreadsheet. Cross tabulations were made using the Reflex data analysis program.

Eight questions were to be answered as a result of the follow-up study. Responses pertaining to each of the questions will be examined in this chapter.

1. What are the demographic characteristics of workshop participants?

Items 1 through 8 of the questionnaire pertain to the demographic characteristics of the group surveyed. Of the 233 participants surveyed, 124 (53%) were faculty, 104 (45%) were staff and 5 (2%) were administration. Of the 161 (69%) questionnaires returned, responses indicated that 78 (48%)

were faculty, 45 (28%) were staff, 37 (23%) were administration and 1 (.6%) was in another category.

PERSONNEL CLASSIFICATION

	# in Office Data Base		# of Respondents	
Faculty	124	(53%)	78	(48%)
Staff	104	(45%)	45	(28%)
Administration	5	(2%)	37	(23%)
Other	0	(0%)	1	(.6%)

The high response rate of administration is most likely due to the college's recent reclassification of administrative technical employees to administrative professional. It is assumed that some of the respondents classified themselves as administration while the Office of Academic Computing data base identified them as staff.

The surveyed group was comprised of 118 (51%) males and 115 (49%) females. Of those responding, 82 (51%) were male and 75 (47%) were female while 4 (2%) did not answer the question. It appears that an equivalent percentage of male and females responded to the questionnaire as were surveyed.

The ages of those responding fall into the following categories: 3 (1%) were under 25 years of age, 33 (20%) were 25-35 years of age, 51 (32%) were 35-45 years of age, 53 (33%) were 45-55 years of age, and 21 (13%) were over 55 years of age. Of the respondents, 74 (46%) are over 45 years of age.

In reply to the question regarding the highest educational level attained, 24 (15%) responded high school diploma, 11 (7%) indicated associate degree, 13 (8%) marked bachelor degree, and 105 (65%) checked schooling beyond a bachelor degree. Eight (5%) did not answer the question.

A cross tabulation between personnel classification and educational level indicates that some employees who normally would be considered staff classified themselves as administration. The results of this cross tabulation are as follows:

PERSONNEL CLASSIFICATION	EDUCATIONAL LEVEL				
	High School	Associate	Bachelor	Some Graduate	Total
Faculty	0	1	4	73	78
Staff	22	9	4	10	45
Administration	2	1	5	29	37
Other	0	0	0	1	1
Total	24	11	13	113	161

The unlikely educational level of some of the responding administration (2 with a high school diploma and 1 with an associate degree) is most likely due to the recent administrative technical reclassification. All but five (16%) of the faculty respondents have done some graduate work.

Of the respondents, 147 (91%) took the basic microcomputer literacy workshop 1 time, 5 (3%) took it 2

times, and 8 (5%) took the training more than twice. One person did not answer the question. Of those answering this item, 8% took the workshop more than once. Comments indicated that a computer was not available after completing the training and the workshop was retaken at a later date when equipment was placed at the work site.

Four (2%) of the respondents last took the workshop less than 3 months ago, 27 (17%) took it 3 to 6 months ago, and 119 (74%) had the training more than 6 months ago. Of those responding, 11 (7%) did not answer the question. The questionnaire was sent to those who participated in the workshop between 7/1/85 and 6/30/87. Therefore, of the 119 responding more than 6 months ago, the time frame ranges from 6 to 26 months.

When asked if a microcomputer was available for use at work, 152 (94%) responded yes while 9 (6%) indicated no. Of those responding, 60 (37%) indicated having a microcomputer at home, 100 (62%) marked that they did not, and 1 (.6%) did not answer the question. A cross tabulation between having a computer at home with personnel rank shows the following:

COMPUTER AVAILABILITY AT HOME

Computer at Home	Faculty	Staff	Administration	Other
Yes	37	11	12	0
No	40	34	25	1
No Answer	1	0	0	0

Of the responding faculty, 47% have a computer at home. Of the responding staff, 24% have a computer at home. Of the responding administration, 32% have a computer at home. These groups are not independent of each other. The same household may have members in two of the personnel groups.

Of the respondents, 93% indicated that the microcomputer available for use at work was IBM-PC compatible. Of those responding, 67% indicated that the microcomputer at home was IBM-PC compatible.

Of the respondents, about half were female and half were male. Faculty represented about 50% of the responding group. The median age of the respondents was about 45 and about 70% had taken classes beyond a bachelor degree.

2. Were the participants satisfied with the inservice training?

Item 9 of the survey addressed this question. Ninety-six (60%) of the respondents rated the workshop very worthwhile, 50 (31%) rated it worthwhile and 15 (9%) rated it O.K. No respondent selected the categories of little value or a waste of time. Since the response rate was high and the demographic characteristics are similar to the known characteristics of the participants in the academic computing data base, it is very likely that those who did not respond to the survey would have responded in a like fashion. The vast majority of the respondents felt that the workshop was beneficial.

3. To what extent did participants make use of their training?

Items 10 through 13 of the survey addressed this question. Respondents indicated that before taking the workshop, the average number of hours spent per week working on a microcomputer was 3.87 hours. The maximum number of hours a computer was used was 35 and the minimum 0, with a standard deviation of 7.15. By not including the respondent who used the microcomputer 35 hours per week, the survey indicated that the typical respondent logged 2 to 3 hours per week on the microcomputer.

At the time of the survey, the respondents averaged 8.32 hours per week working on a microcomputer. The maximum number of hours a computer was used was 35 and the minimum 0, with a standard deviation of 9.00. Thus, the number of hours which the respondents spent working on a microcomputer appreciably increased subsequent to attending the workshop.

A cross tabulation of item 11 and 7 was made to compare the average number of hours spent per week working on a microcomputer to whether one was available for use at work. The findings are as follows:

AVAILABILITY/USAGE RELATIONSHIP

Computer at Work	Average # of Hours Computer Used per Week					
	0	1-7	7-14	14-21	21-28	28-35
Yes	30	58	22	29	3	10
No	4	4	1	0	0	0

Thirty (19%) of the 161 respondents had a computer at work and after the workshop did not use it.

Anne Stewart's research done in 1984 indicated that less than 30% of the employees in any personnel classification group used computer hardware daily in their work (p. 3). The respondents of Stewart's survey used the computer to a lesser degree than do the Ferris State College respondents. This may be due to the fact that fewer computers were available in 1984.

Mark Peel's respondents ranked introductory and advanced computer workshops as being high in importance for academic staff use of computers (p.20). The survey done at Ferris State College supports Peel's findings as indicated by the increased time spent per week working on a microcomputer after taking the basic microcomputer literacy workshop.

A cross tabulation of item 11 and 8 was made to compare the average number of hours spent per week working on a microcomputer to whether one was available for use at home. Ten (6%) of the 161 respondents had a computer at home and still did not use it after taking the workshop. However, some of these microcomputers were not IBM-PC compatible; therefore, the training and software received was of little assistance other than for general microcomputer knowledge.

At the time of the survey, respondents indicated that they used an average of 2.01 application programs regularly. In response to item 12 when asked to check which of the

following application programs were used, the following totals were obtained:

- -

TOTAL RESPONDING TO USING THE PROGRAM

34 ExpressCalc	79 PC-Write	63 PC-File
33 PC-Calc	41 WordStar 3 or 4	20 dBase II or III
4 VP Planner	9 WordStar 2000	2 RBase
1 Symphony	2 MicroSoft Word	3 Condor
2 SuperCalc	11 DisplayWrite	22 graphics program
22 Lotus 123	3 LazyWriter	10 telecommunications
4 VisaCalc	10 other word processor	
5 other spreadsheet		

- -

Of those responding, 105 tallies were recorded for the use of electronic spreadsheets, 155 tallies were recorded for the use of word processors, and 88 tallies were recorded for the use of data base managers. The data base management response total is most likely on the low side as the questionnaire neglected to request an other category for data base management programs. Many respondents indicated using more than one program in the various categories.

Anne Stewart's survey indicated that word processing was the application program being taught the most often (p.6). It is unclear if this software met the greatest need or if it was assumed that this application would be of the greatest benefit.

Hugh McHenry and Stan Franklin's respondents at Memphis State University ranked word processing first while data base management and electronic spreadsheets tied for second place (p. 175).

In Ann Kapp and Addie Knickerbocker's survey, 96% of the respondents identified word processing as the most frequently used application program. The results of the Ferris State College survey supports the first place ranking of a word processor in the other three surveys. The Ferris survey produced results similar to the McHenry and Franklin survey regarding the use of data base managers and electronic spreadsheets.

4. Is there a relationship between self-reported satisfaction with the workshop and the use of a microcomputer?

A cross tabulation of the rating of the workshop with the number of hours spent working per week on a microcomputer indicates the following:

SATISFACTION WITH WORKSHOP / USE OF A MICROCOMPUTER

Workshop Rating	Average # of Hours Computer Used per Week 0-7	7-14	14-21	21-28	28-35
Very Worthwhile	59	12	20	0	5
Worthwhile	28	11	5	2	4
O.K.	9	0	4	1	1
Total Respondents	96	23	29	3	10

An examination of the above chart reveals that in general for each of the hour categories the percentage of respondents selecting the categories very worthwhile, worthwhile, and O.K. is the same regardless of the amount of

time the computer is used. This would indicate that users of varying skills benefited from the workshop.

5. What was the relative value of the software packages taught in the workshop?

Item 14 of the survey addressed this question. The total responses for the ranking of ExpressCalc, PC-Write, and PC-File is as follows:

RELATIVE VALUE OF SOFTWARE TAUGHT

Total #	Ranking High to Low		
	3	2	1
35	ExpressCalc	PC-File	PC-Write
26	PC-Write	PC-File	ExpressCalc
19	PC-File	ExpressCalc	PC-Write
14	ExpressCalc	PC-Write	PC-File
11	PC-File	PC-Write	ExpressCalc
10	PC-Write	ExpressCalc	PC-File
46	(No response)		

Of those responding to item 14, 43% ranked ExpressCalc of greatest value, 31% ranked PC-Write second, and 26% ranked PC-File third. A cross tabulation of item 14 with item 1 indicated that all personnel groups (faculty, staff, and administrative) ranked ExpressCalc as having the greatest value. Faculty and staff equally ranked PC-Write and PC-File while the administrative group ranked PC-Write higher than PC-File.

6. What aspects of the workshop did the participants feel were the most helpful?

Item 15 of the survey addressed this question. Seven attributes were repeated in response to this item:

POSITIVE WORKSHOP ATTRIBUTES

# Responding	Helpful Aspects
59	Introduction to microcomputers
29	Hands-on approach
28	Useful software
22	Eliminated fears, personal help
16	Good examples, easy to understand
11	Everything was good
5	Small class size

Some respondents indicated more than one helpful aspect. Thirty-three (20%) respondents did not answer this item.

Anne Stewart's respondents indicated that hands-on instruction was essential, and that small group instruction and easy access to experts and resource people are recommended (p. 11). The Ferris State College respondents confirmed Stewart's findings.

Hugh McHenry and Stan Franklin's survey at Memphis State University ranked hands-on operation of computers, and familiarity and understanding of computers as being the most important aspects of a 42-hour computer workshop. Other items which were rated as being valuable were the discussion of computer hardware, programming, confidence and comfort in using computers, organization of the course, evaluation and

selection of computers, course lectures, software packages, quality of instruction in the course, having a resource person in the instructor, and peer association (p. 175).

Evaluations from vocational teachers surveyed by Irvin Iwler and Grace Ferrero gave extremely positive ratings to hands-on activities and handouts received at a basic microcomputer literacy workshop (p. 5).

The helpful aspects cited by Ferris employees in this report are similar to those noted in other surveys.

7. What improvements can be made for future basic microcomputer literacy inservice training?

Item 17 of the survey addressed this question. Respondents indicated nine topics in response to this item:

NEEDED WORKSHOP IMPROVEMENTS

# Responding	Suggestions
15	Take more time
14	Offer more advanced classes
9	Give more basic explanations
9	Offer more sections
8	Assign homework and lab time
3	More hands-on while instruction is given
2	Improve advertising
1	More staff members are needed
1	Teach entire departments at a time

Some respondents made more than one suggestion. Of the 106 (66%) who did not indicate any suggestions, an

overwhelming majority offered encouragement to keep up the good work.

McHenry and Franklin's survey identified insufficient time in the laboratory and insufficient depth of coverage as being the major weaknesses of the workshop (p. 176). This workshop was 42 hours in length and the Ferris workshop of 9 hours received similar comments.

Iwler and Ferrero's respondents indicated that more hands-on time was required, a greater variety of software needed to be covered, and in the case of larger sessions, a smaller student/instructor ratio was needed (p.5).

Hands-on time was mentioned in every study as being an important asset to computer training. In nearly all studies, additional hands-on time was requested.

8. What services offered by the Office of Academic Computing are used by the workshop participants?

Item 16 of the survey addressed this question. Respondents checked all services that applied. The responses to this item are as follows:

RESPONDENTS USING OFFICE OF ACADEMIC COMPUTING SERVICES

# Responding	Services Used
58	Used telephone support
52	Taken another workshop
49	Used the training materials produced by the office
43	Requested software assistance (review or configuration)
42	Copied software from the public domain/ shareware library
42	Used none of the services
39	Requested hardware assistance (review or configuration)
33	Purchased hardware or software
21	Used the lab
18	Viewed training tapes
12	Other
8	Called the bulletin board
6	Used the reading room

After taking the workshop, about 3/4 (74%) of the respondents continue to use services provided by the Office of Academic Computing. Many respondents use more than one service.

CHAPTER 6

SUMMARY

Written evaluations completed at the end of the basic computer literacy workshops as well as verbal feedback received by the instructors were extremely positive. This follow-up study indicates that the inservice training has benefited a majority of the workshop participants responding to the questionnaire.

The response rate of the questionnaire (69%) was higher than most surveys made at Ferris even when follow-up letters were used. Of the 233 questionnaires mailed to faculty, staff, and administrators who participated in a basic microcomputer literacy workshop between 7/1/85 and 6/30/87, 161 were completed and returned by the due date.

Eight research questions have been answered in order to determine the merit and worth of this inservice training. A summary of those findings follows.

1. What are the demographic characteristics of workshop participants?

Of the respondents, about half were female and half were male. Faculty represented about 50% of the responding group. The median age of the respondents was about 45 and about 70% had taken classes beyond a bachelor degree. These findings would indicate that both young and old, male and female are interested in obtaining computer skills and that the

respondents were more likely to be approaching retirement age rather than just entering the work force.

2. Were the participants satisfied with the inservice training?

When asked to rate the workshop, 60% of the respondents selected the category very worthwhile, 31% selected the category worthwhile and 9% selected the category O.K. None of the respondents selected the category of little value or the category a waste of time. These findings indicate that the respondents benefited from the workshop.

3. To what extent did participants make use of their training?

Before taking the workshop, the typical respondent logged 2 to 3 hours per week on the microcomputer. At the time of the survey, the respondents averaged 8.32 hours per week working on a microcomputer. Thus, the number of hours which the respondents spent working on a microcomputer appreciably increased subsequent to attending the workshop. At the time of the survey, respondents indicated that they used an average of 2.01 application programs regularly.

4. Is there a relationship between self-reported satisfaction with the workshop and the use of a microcomputer?

In general, the number of hours spent working on a microcomputer had no effect on the rating given to workshop satisfaction. This would indicate that users of varying skills benefited from the workshop.

5. What was the relative value of the software packages taught in the workshop?

Forty-three percent of the respondents ranked ExpressCalc to be of greatest value, 31% ranked PC-Write second, and 26% ranked PC-File third. This would indicate that either proprietary packages were being used for word processing or data base management, or else that an electronic spreadsheet had greater value for the respondents.

6. What aspects of the workshop did the participants feel were the most helpful?

The respondents cited the following workshop aspects as being the most helpful: the introduction to microcomputers, the hands-on approach, the useful software, the elimination of fears and personal assistance received, the easy-to-understand examples, and the small class size.

7. What improvements can be made for future basic microcomputer literacy inservice training?

Sixty-six percent of the respondents did not offer any suggestions. However, many of those not responding to this item did offer encouragement to keep up the good work.

Suggestions for improvements included: take more time, offer more advanced classes, give more basic explanations, offer more sections, assign homework and lab time, include more hands-on time while instruction is given, improve advertising, increase the number of staff, and teach entire departments at a time.

8. What services offered by the Office of Academic Computing are used by the workshop participants?

After taking the workshop, 74% of the respondents continue to use services provided by the Office of Academic Computing. Many of the respondents use more than one service. The services indicated as being used by the largest number of respondents included: called telephone support, enrolled in another workshop, used written training materials, requested software assistance, copied public domain/freeware/shareware programs from the software library, requested hardware assistance, purchased hardware or software, used microcomputer lab, viewed training tapes, accessed the bulletin board, and used the reading room.

CONCLUSIONS

It appears that those responding to the questionnaire benefited from the basic microcomputer literacy workshop. Satisfaction was high, and computer usage increased after taking the workshop. Respondents continue to use the services provided by the Office of Academic Computing.

Therefore, it can be assumed that computer skills of the respondents continue to increase.

IMPLICATIONS

Several faculty members are using the materials developed for the inservice training to teach computer literacy in their curriculums. The School of Education recognized the value of the inservice training and worked with the Office of Academic Computing to further develop the content. This material has been offered in workshops for graduate and undergraduate credit in a "Microcomputer Applications for Education" workshop.

Ownership of a microcomputer is another measure of the personal commitment of faculty, staff, and administrators in computer usage. During the 86/87 fiscal year, the Office of Academic Computing processed over $300,000 in computer hardware and software sales to Ferris employees and students.

In addition to improving computer skills on campus, a major enhancement in morale has resulted. Faculty and staff feel that the college is trying to do something for them by providing services and support through the Office of Academic Computing.

A cautionary word must be included. There is the possibility that respondents were operating under a Hawthorne effect. Respondents may have answered the questionnaire in this fashion because they realized they were the subjects of a study. Also, as the vast majority of participants attended

the workshop on a voluntary basis, the respondents may be "keeners" in the implementation of any new program. The only way to verify if this inservice training continues to work is to continue to monitor its progress over several years.

RECOMMENDATIONS

The suggestions offered by the respondents basically request more of everything -- more time in workshops, more advanced classes, more explanations, more sections, more hands-on experience, and more advertising. The Academic Computing Office currently is staffed by three full-time employees and seven part-time work study students. Support staffs are not increasing at the same rate as the computer user community. Neither the personnel resources nor the monetary resources are available to offer additional support or services.

The Academic Computing Office was created to offer support to faculty. Out of necessity, it has filled a campus void by providing support and services to non-faculty members. However, if the office continues this diversified support, it cannot lead and direct current microcomputer users to more complex skills and train new users in basic microcomputer literacy as well. Either additional resources must be allocated to the office or the office must cut back on its support to non-faculty members.

Norine Jalbert stated that "in order for faculty to be successfully socialized into the computing culture requires

yet more commitment and expense on the part of administrations" (p. 17). Administrators must be willing to provide faculty with release time to develop computer skills in order to adapt application programs to their courses. Also, the hardware, software, and support services must be readily available to those attempting to use microcomputers. Insufficient funding will seriously deter microcomputer integration on college campuses.

Works Cited

Iwler, Irvin H. and Ferrero, Grace W. Computer Literacy for Vocational Teachers of the Handicapped. Final Report. Pittsburgh University, Pa. Dept. of Vocational Education, June 30, 1987: 1-62.

Jalbert, Norine Lau. Computer Literacy and the Forgotten Professor. Paper presented at the Annual Meeting of the American Educational Research Association (70th, San Francisco, CA, April 16-20, 1986), April 1986: 1-23.

Johnson, M. "Looking Back at Thinking Ahead: 87 Educators in Session." Proceedings of 1975 Workshop of the National Educational Association of United States, 1975.

Kapp, Ann B. and Knickerbocker, Addie H. Computer Literacy Development. A Project Report. Northeast Louisiana University, Monroe, November 1983: 1-91.

McHenry, Hugh and Franklin, Stan. "Microcomputer In-Service Training for University Faculty and Staff: A Case Report." Collegiate Microcomputer, volume IV, number 2, May 1986: 173-178.

Rawitsch, D. G. "Teaching Educators about Computers: A Different Ball Game." The Computing Teacher, 9(4), 1981: 27-35.

Stewart, Anne. Staff Computer Literacy in the Community College: A Resource Inventory and Directory of League for Innovation Institutions 1984. A League Fellows Project, Lane Community College, Summer 1984: 1-55.

Works Consulted

Iwler, Irvin H. and Ferrero, Grace W. Computer Literacy for Vocational Teachers of the Handicapped. Final Report. Pittsburgh University, Pa. Dept. of Vocational Education, June 30, 1987: 1-62.

Jalbert, Norine Lau. Computer Literacy and the Forgotten Professor. Paper presented at the Annual Meeting of the American Educational Research Association (70th, San Francisco, CA, April 16-20, 1986), April 1986: 1-23.

Jay, Tim. "In-Service: What You Need to Know Before You Begin." Electronic Learning, September 1983: 90-93.

Johnson, M. "Looking Back at Thinking Ahead: 87 Educators in Session." Proceedings of 1975 Workshop of the National Educational Association of United States, 1975.

Kapp, Ann B. and Knickerbocker, Addie H. Computer Literacy Development. A Project Report. Northeast Louisiana University, Monroe, November 1983: 1-91.

Kopke, Jonathan E. "The Computer Awareness Workshop at the University of Cincinnati." Cause/Effect, volume 7, number 4, July 1984: 4-7.

McHenry, Hugh and Franklin, Stan. "Microcomputer In-Service Training for University Faculty and Staff: A Case Report." Collegiate Microcomputer, volume IV, number 2, May 1986: 173-178.

Nordman, Reg. An Effective Microcomputer Inservice: Designing and Using Awareness Workshops. Master of Education Project, University of Victoria, 1982: 1-75.

Norris, Cathleen A. and Lumsden, D. Barry. "Evaluating Do-It-Yourself Computer Inservice Training Packages: Methodology and Some Findings." The Computing Teacher, February 1984: 65-66.

Peel, Mark S. A Comprehensive Program for Computer Related Instruction at the State University of New York Agricultural and Technical College Delhi, New York. State University of New York, Delhi Agricultural and Technical College, September 1984: 1-56.

Rawitsch, D. G. "Teaching Educators about Computers: A Different Ball Game." The Computing Teacher, 9(4), 1981: 27-35.

Stewart, Anne. Staff Computer Literacy in the Community College: A Resource Inventory and Directory of League for Innovation Institutions 1984. A League Fellows Project, Lane Community College, Summer 1984: 1-55.

Young, Marsha. "Faculty Computer Workshops: A Faculty Becoming Computer Literate." A.A.D., November 1985: 347-353.

Widmer, Connie and Parker, Janet. "Computer Phobia: Causes and Cures." Action in Teacher Education, volume 5, number 4, Winter 1983/84: 23-25.

September 21, 1987

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Ferris State College

Dear ,

The growing numbers of microcomputers on the campus of Ferris State College has created a need to prepare faculty and staff in the use of these machines. You participated in a Basic Microcomputer Literacy workshop offered by the Office of Academic Computing between July 1, 1985 and June 30, 1987. A follow-up study is being conducted on this inservice training to evaluate its effectiveness.

I am using this questionnaire as part of a research project requirement for a master's degree program in Occupational Education at Ferris State College. The results of this survey also will be used by the Office of Academic Computing to help determine the direction of future office activities.

The questionnaire consists of 17 questions and should not take longer than 15 minutes to answer. Permission has been secured from the Vice President of Academic Affairs to complete this study. You need not sign the questionnaire and you are assured that your responses will remain anonymous.

We share a common interest and concern for microcomputer training. In order to obtain valid results, your cooperation in filling out the enclosed questionnaire is needed. Please answer all of the questions and return the completed questionnaire to me in the Office of Academic Computing, 204 Education, no later than *October 7*. An addressed envelope is provided for your use.

A summary of the study can be obtained after December 1, 1987 by contacting the Office of Academic Computing at extension 4120.

Thank you for your cooperation.

Regards,

Sharon Octernaud
Microcomputer Software Trainer

Please answer the following questions by either writing your answer in the space provided, or by checking [x] the box next to the most appropriate answer.

1. I am
   a. [ ] faculty
   b. [ ] staff
   c. [ ] administration
   d. [ ] other

2. I am
   a. [ ] male
   b. [ ] female

3. I am
   a. [ ] under 25 years of age
   b. [ ] 25-35 years of age
   c. [ ] 35-45 years of age
   d. [ ] 45-55 years of age
   e. [ ] over 55 years of age

4. My highest educational level is
   a. [ ] high school diploma
   b. [ ] associate degree
   c. [ ] bachelor degree
   d. [ ] some graduate education

5. I took the Basic Microcomputer Literacy workshop
   a. [ ] 1 time
   b. [ ] 2 times
   c. [ ] more than 2 times

6. I last took this workshop
   a. [ ] less than 3 months ago
   b. [ ] 3 - 6 months ago
   c. [ ] more than 6 months ago

7. Do you have a computer of any kind available for your use at work?
   a. [ ] yes
   b. [ ] no

   7a. If yes, is this computer IBM compatible?
      a. [ ] yes
      b. [ ] no

8. Do you have a microcomputer of any kind at home?
   a. [ ] yes
   b. [ ] no

   8a. If yes, is this microcomputer IBM compatible?
      a. [ ] yes
      b. [ ] no

9. The workshop was
   a. [ ] very worthwhile
   b. [ ] worthwhile
   c. [ ] O.K.
   d. [ ] of little value
   e. [ ] a waste of time

10. Before taking the workshop, I spent on the average _____ hours per week working on a microcomputer.

11. On the average, I now spend _____ hours per week working on a microcomputer.

- Questionnaire continues on the back -

12. Check all of the software programs that you are using:

a. [ ] ExpressCalc
b. [ ] PC-Calc
c. [ ] VP Planner
d. [ ] Symphony
e. [ ] SuperCalc
f. [ ] Lotus 123
g. [ ] VisaCalc
h. [ ] other electronic spreadsheet
i. [ ] PC-Write
j. [ ] WordStar 3 or 4
k. [ ] WordStar 2000
l. [ ] MicroSoft Word
m. [ ] DisplayWrite
n. [ ] LazyWriter
o. [ ] other word processor
p. [ ] PC-File
q. [ ] dBase II or III
r. [ ] RBase
s. [ ] Condor
t. [ ] other graphics program
u. [ ] telecommunications program
v. [ ] graphics program

13. State the number of software programs that you use regularly. _____

14. With 3 being of highest value and 1 of lowest value, rank the following programs in order of value to you.

a. [ ] ExpressCalc
b. [ ] PC-Write
c. [ ] PC-File

15. What were the most helpful aspects of the workshop to you?

_____

_____

_____

16. Since completing the workshop, what services offered by the Office of Academic Computing have you used? (Check all that apply.)

a. [ ] used telephone support
b. [ ] taken another workshop
c. [ ] viewed training tapes
d. [ ] used the lab
e. [ ] used the reading room
f. [ ] purchased hardware or software
g. [ ] called the bulletin board
h. [ ] copied software from the public domain/shareware library
i. [ ] used the training materials produced by the office
j. [ ] requested hardware assistance (review or configuration)
k. [ ] requested software assistance (review or configuration)
l. [ ] other (please specify) _____
m. [ ] none

17. What suggestions do you have for improving the Basic Microcomputer Literacy workshop?

_____

_____

_____

Thank you for your cooperation.

APPENDIX I
Freeware/Shareware Program Registration

THE FREEWARE/SHAREWARE CONCEPT

The four software packages included with this book are examples of a software distribution policy known as Freeware/Shareware. Software distributed in this manner generally can be shared freely with others if the program is not modified in any way. Should the person receiving the software find it useful, the user has the moral obligation to register the software. Registered users receive bound documentation and several updates of the program as they are produced by the author. Registration costs from $5 to $90.

ExpressCalc Version 3.1

Expressware
PO Box 230
Redmond, WA 98073

Diskettes Only:	$10.00	Registered Set:	$49.00
Printed Textbook:	15.00	Shipping is included	

PC-Write Version 2.7

Quicksoft
219 First N. #224
Seattle, WA 98109

Diskettes Only:	$16.00	Registered Set:	$89.00
Hardcover Manual:	45.00	Softcover Manual:	35.00

PC-File+ Version 1.0

Buttonware Inc.
PO Box 5786
Bellevue, WA 98006

Registered Set: $69.95 + $5.00 shipping and handling

QMODEM Version 2.00E

The Forbin Project
c/o John Friel III
4945 Colfax Avenue S.
Minneapolis, MN 55409

Registration Fee: $30.00

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APPENDIX II
Information Contained on the Program Diskettes

Instructions in this Appendix indicate text to be typed at the keyboard with underlining. Text appearing on the computer's screen is indicated in **bold** print.

INFORMATION IN THE *READ ME* FILES

Each of the four sets of program diskettes included with this book may contain a READ ME file. A READ ME file provides information on how to use a software program. To determine if a READ ME file is included on a diskette, complete the following steps:

1. If necessary, boot the system. With an operating system diskette in drive A:, press the Ctrl, Alt, Del key combination. (While holding down the Ctrl and Alt keys, press the Del key.)

2. Remove the MS-DOS diskette from drive A:.

3. Place the diskette containing the applications program in drive A:.

4. To search the displayed directory for a READ ME file, type DIR and press the <RETURN> key. Typically these files are READ_ME, README, or READ.ME but other variations may exist. Carefully note the *exact* spelling of the READ ME file.

Printing a READ ME file:

To print a READ ME file, complete the following steps:

1. Verify that the printer is turned on and that the A> prompt is displayed on the screen.

2. Place the diskette containing the READ ME file in drive A:.

3. At the A> prompt, type COPY *FILENAME* PRN; and press the <RETURN> key.

   FILENAME represents the file identified above in step 4. The spelling must be identical to that in the directory listing. This command indicates that the file called filename is to be copied to the printer. A READ ME file can normally be printed by executing one of the following commands:

```
A>COPY READ_ME PRN    <RETURN>
A>COPY READ.ME PRN    <RETURN>
A>COPY README PRN     <RETURN>
```


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Displaying a READ ME file:

To display a READ ME file on the screen, complete the following steps:

1. Verify that the A> prompt is displayed on the screen.

2. Place the diskette containing the READ ME file in drive A:

3. At the A> prompt, type TYPE *FILENAME* and press the <RETURN> key.

As in the procedure above, *FILENAME* represents the **READ ME** file. The spelling must be identical to that in the directory listing. This command indicates that the file called filename is to be typed to the screen. A READ ME file can normally be displayed by executing one of the following commands:

```
A>TYPE READ_ME PRN    <RETURN>
A>TYPE READ.ME PRN    <RETURN>
A>TYPE README PRN     <RETURN>
```

PRINTING THE PROGRAM MANUALS CONTAINED ON DISKETTE

ExpressCalc 3.1

1. If necessary, boot the system. With an operating system diskette in drive A:, press the Ctrl, Alt, Del key combination. (While holding down the Ctrl and Alt keys, press the Del key.)

2. Remove the MS-DOS diskette from drive A:.

3. Place the ExpressCalc supplemental diskette in drive A:.

4. Verify that the printer is turned on and that 200 sheets of paper are available.

5. After the A> prompt, type the file name PRINTDOC and press the <RETURN> key.

A user's manual of approximately 190 pages will be printed. On a typical dot matrix printer, this takes about an hour and a half.

PC-Write 2.7

1. If necessary, boot the system. With an operating system diskette in drive A:, press the Ctrl, Alt, Del key combination. (While holding down the Ctrl and Alt keys, press the Del key.)

2. Remove the MS-DOS diskette from drive A:.

3. Place the PC-Write program diskette in drive A:.

4. Verify that the printer is turned on and that 65 sheets of paper are available.

5. After the A> prompt, type the file name PRINTMAN and press the <RETURN> key.

A 17-page Tutorial and a 44-page Quick Guide will be printed. On a typical dot matrix printer this takes about a half an hour.

PC-File+ 1.0

The PC-File+ software does not provide a manual on the program or utility disk. A READ.ME file is provided. The read me file contains a four-page quick reference guide. The READ.ME file containing the reference guide can be printed by following the steps described in the **Information in the Read Me Files** section of this appendix.

QMODEM 2.3

1. If necessary, boot the system. With an operating system diskette in drive A:, press the Ctrl, Alt, Del key combination. (While holding down the Ctrl and Alt keys, press the Del key.)

2. Remove the MS-DOS diskette from drive A:

3. Place the diskette containing QMODEM in drive A:.

4. Verify that the printer is turned on and that 50 sheets of paper are available.

5. After the A> prompt, type COPY QMODEM22.DOC PRN and press the <RETURN> key.

A user's manual of approximately 50 pages will be printed. On a typical dot matrix printer this takes about a half an hour.

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APPENDIX III
Making Copies of the Software

Instructions in this Appendix indicate text to be typed at the keyboard with underlining. Text appearing on the computer's screen is indicated in **bold** print.

BACKING UP THE APPLICATIONS SOFTWARE

1. If necessary, boot the system. With an operating system diskette in drive A:, press the Ctrl, Alt, Del key combination. (While holding down the Ctrl and Alt keys, press the Del key.)

2. Format eight diskettes by completing the following steps:

   a. Place an operating system disk containing the FORMAT.COM file in drive A:.

   b. Place an unformatted diskette in drive B:.

   c. After the A> prompt, type FORMAT B: <RETURN>.

   At the computer prompts, press the <RETURN> key for no label and the Y key (Yes) to indicate that another diskette is to be formatted. When the last diskette has been formatted, press the N key (No) to exit the formatting process.

3. Place one of the applications program diskettes into drive A:. Insert a formatted disk into drive B:. After the A> prompt, type COPY A:*.* B: <RETURN>.

   This command copies all of the files on the program diskette located in drive A: to the diskette located in drive B:. Repeat step 3 for each of the program diskettes included with this book.

4. Label each backup diskette with the name of the program copied onto it.

5. Store the original diskettes in a safe place. Use these backup diskettes to make copies of the programs for daily use.

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CREATING AN EXPRESSCALC 3.1 DISKETTE FOR DAILY USE

The daily-use diskette for ExpressCalc will contain both the operating system and the necessary files for the execution of the spreadsheet program. To make this diskette, complete the following steps:

1. If necessary, boot the system. With an operating system diskette in drive A:, press the Ctrl, Alt, Del key combination. (While holding down the Ctrl and Alt keys, press the Del key.)

2. Place an operating system disk containing the FORMAT.COM file in drive A:.

3. Place an unformatted diskette in drive B:.

4. After the A> prompt, type FORMAT B: <RETURN>.

   This command formats a disk and then copies the operating system on it. At the computer prompts, press <RETURN> for no label and N for no more disks to be formatted. ExpressCalc 3.1 is too large to be copied onto a disk formatted with the system. Therefore, a separate disk will be used to boot the machine before using this spreadsheet program.

5. Place the ExpressCalc diskette into drive A:.

6. The disk formatted with the system remains in drive B:.

7. Copy onto drive B: the ten files needed to run the program. The other files on the original diskettes are documentation files or are files which are not used on a daily basis. At the A> prompt, type the following commands:

```
A>COPY CALC.EXE B:
A>COPY CALC2.EXE B:
A>COPY CALC3.EXE B:
A>COPY CALC4.EXE B:
A>COPY CALC5.EXE B:
A>COPY CALC.MSG B:
A>COPY BW.PRO B:
A>COPY 40.PRO B:
A>COPY BW40.PRO B:
A>COPY SL.PRO B:
```

8. Label the disk *ExpressCalc 3.1* and attach a write protect tab.

9. This disk is for daily use.

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CREATING A PC-WRITE 2.7 DISKETTE FOR DAILY USE

To make this diskette, complete the following steps:

1. If necessary, boot the system. With an operating system diskette in drive A:, press the Ctrl, Alt, Del key combination. (While holding down the Ctrl and Alt keys, press the Del key.)

2. Place an operating system disk containing the FORMAT.COM file in drive A:.

3. Place an unformatted diskette in drive B:.

4. After the A> prompt, type FORMAT B: and press the <RETURN> key.

   PC-Write 2.7 with the help screens and the dictionary is too large to be copied onto a formatted disk with a system. Therefore, a separate disk will be used to boot the machine before using this word processing program. At the computer prompts, press the <RETURN> key for no label and the N key for no more disks to be formatted.

5. Place the PC-Write program diskette into drive A:.

6. The formatted disk remains in drive B:.

7. At the A> prompt, type WORKDISK B: <RETURN>. This command copies onto drive B: the files needed to run the program and to create a printer file.

   The computer asks if the Help file is to be included. Press the Y key to indicate yes. The help file and edit control file are copied onto the disk in drive B:.

   The computer asks if a Tandy 1000 is being used. Most people will press the N key in response to this question.

   The computer asks if a copy of the PC-Write utility diskette is available. Press the Y key to indicate yes.

8. As requested, remove the program disk from drive A: and insert the PC-Write 2.7 utility disk. After the disk has been inserted, press any key to continue.

   This disk will be configured for use with a specific printer. In response to the laser printer question, most people will press the N key to indicate no.

   To enable PC-Write to take full advantage of a printer's capabilities, select the printer manufacturer option from the choices displayed on the screen which corresponds to the printer being used.

   A second set of options appears on the screen. Indicate the specific printer model being used.

   A print file has been created.

9. The computer asks if a color monitor is used. Indicate yes or no depending upon the monitor in use.

10. Press the Y key to indicate that the word list is to be copied onto drive B:.

11. An A> prompt appears on the screen when the process has been completed.

12. Label the disk *PC-Write 2.7* and attach a write protect tab. The label might also include information on the type of monitor and printer for which the program was configured.

13. This disk is for daily use.

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CREATING A PC-FILE+ 1.0 DISKETTE FOR DAILY USE

The daily-use diskette for PC-File+ will contain the necessary files for the execution of the data base program. To make this diskette, complete the following steps:

1. If necessary, boot the system. With an operating system diskette in drive A:, press the Ctrl, Alt, Del key combination. (While holding down the Ctrl and Alt keys, press the Del key.)

2. Place an operating system disk containing the FORMAT.COM file in drive A:.

3. Place an unformatted diskette in drive B:.

4. After the A> prompt, type FORMAT B: <RETURN>.

   PC-File+ with help screens is too large to be copied onto a formatted disk with a system. Therefore, a separate disk will be used to boot the machine before using this data base program. At the computer prompts, press the <RETURN> key for no label and the N key for no more disks to be formatted.

5. Place the PC-File+ program diskette into drive A:.

6. The disk formatted with the system remains in drive B:.

7. Copy onto drive B: the three files needed to run the program. The other files on the original diskette are documentation files or are files which are not used on a daily basis. At the A> prompt, type the following commands:

```
A>COPY PCF.EXE B:        <RETURN>
A>COPY PCFILE.PRO B:     <RETURN>
A>COPY PCF.HLP B:        <RETURN>
```

8. Label the disk *PC-File+ 1.0* and attach a write protect tab.

9. This disk is for daily use.

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CREATING A QMODEM 2.3 DISKETTE FOR DAILY USE

The daily-use diskette for Qmodem will contain both the operating system and the necessary files for the execution of the telecommunications program. To make this diskette, complete the following steps:

1. If necessary, boot the system. With an operating system diskette in drive A:, press the Ctrl, Alt, Del key combination. (While holding down the Ctrl and Alt keys, press the Del key.)

2. Place an operating system disk containing the FORMAT.COM file in drive A:.

3. Place an unformatted diskette in drive B:.

4. After the A> prompt, type FORMAT B:/S <RETURN>.

   This command formats a disk and then copies the operating system on it. At the computer prompts, press the <RETURN> key for no label and the N key for no more disks to be formatted.

5. Place the QMODEM diskette into drive A:.

6. The disk formatted with the system remains in drive B:.

7. Copy the fifteen files needed to run the program onto drive B:. The other files on the original diskette are documentation files or are files which are not used on a daily basis. At the A> prompt, type the following commands:

```
A>COPY QMODEM.COM    <RETURN>
A>COPY QMODEM.000    <RETURN>
A>COPY QMODEM.001    <RETURN>
A>COPY QMODEM.002    <RETURN>
A>COPY QMODEM.003    <RETURN>
A>COPY QMODEM.004    <RETURN>
A>COPY QMODEM.005    <RETURN>
A>COPY QINSTALL.COM  <RETURN>
A>COPY QINSTALL.HLP  <RETURN>
A>COPY QMODEM.CNF    <RETURN>
A>COPY QMODEM.WND    <RETURN>
A>COPY QMODEM.KEY    <RETURN>
A>COPY QMODEM.PRE    <RETURN>
A>COPY QMODEM.FON    <RETURN>
A>COPY QMODEM.XLT    <RETURN>
```

8. Label the disk *QMODEM 2.3 with system* and attach a write protect tab.

9. This disk is for daily use.

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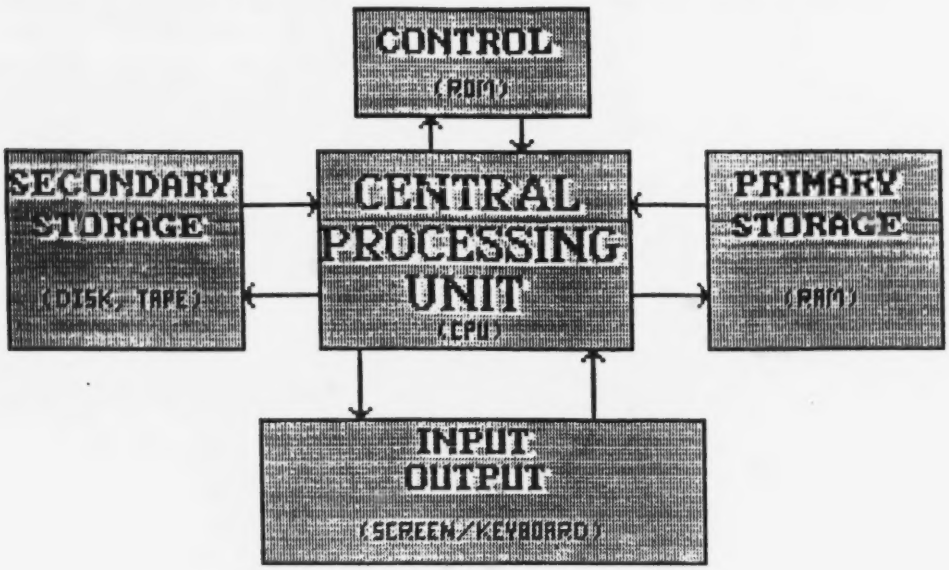
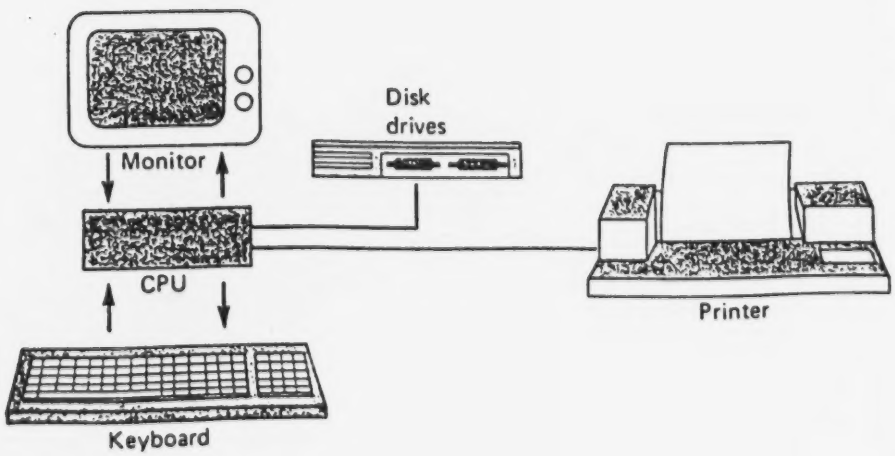
PARTS OF A COMPUTER



Typical Computer Hardware



MICROCOMPUTER SOFTWARE

I. **SYSTEM SOFTWARE** - the set of programs that coordinates the operations of the various hardware components

A. Operating Systems - supervise the processing of applications programs and all input and output of the microcomputer system. The one on machines similar to the IBM-PC is called MS-DOS (Microsoft Disk Operating System).

B. Utilities - programs supplied by the manufacturer to assist the user in copying disks, formatting disks, listing file names of programs on the disks, and other routine activities. Common utilities are:

DIRectory - lists the names of programs on the disk

FORMAT - prepares a blank disk to accept files

COPY - moves files from one disk to another

DISKCOPY - makes an identical copy of a disk

C. Language processors - read programs written in a higher language such as BASIC, COBOL, or FORTRAN and convert the statments into a language the computer can execute.

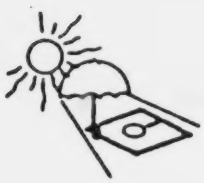
II. **APPLICATION SOFTWARE** - programs designed to solve specific problems. Some application programs are written by the user. Others are purchased and require no user programming, only the input of data. Examples include word processing, spreadsheet, and data base software. Most educational software is of this type.

HANDLING DISKS PROPERLY

Cultivate caring, careful habits. Here are some care and handling tips that help to protect your valuable data stored on the Minidisk.

Store the Minidisks in their protective envelopes.

Store the Minidisks vertically.



Shade from direct sunlight.

Protect from extreme fluctuations in temperature or humidity. Storage and operating range: 10°-50°C., 50°-125°F.

Write only with felt tip pens.

Never touch the surface of the Minidisk.

Never bend or fold.

Never attempt to clean the surface of the Minidisk.

Never eat, drink or smoke in t immediate vicinity.

Never use near magnets or magnetic fields.

FAMILIARIZATION WITH KEYBOARD

Microcomputer keyboards include keys not found on an ordinary typewriter. Before starting any exercises, it would be useful to take a look at some of these specialized keys.

1. TYPEWRITER KEYS - used as with normal typewriter
   a. 2 Shift keys - press down for upper case characters ↑
   b. Backspace key - can also be used to delete characters
   c. Carriage Return key - indicates line break or used to enter a command ↵
   d. Tab key - spaces over to next tab stop ⇆

2. ENTER KEY - works like the carriage return; often used to tell computer to do something.

3. FUNCTION KEYS - 10 multipurpose keys located on the left of your keyboard indicated by an F#. These keys are used by software packages to control program features.

4. CURSOR KEYS - these arrow keys located within the numeric keypad control cursor movement up and down and to the right and left on the screen.

5. HOME / END KEYS - are located within the numeric keypad and allow you to move the cursor to the beginning or end of a line.

6. CONTROL KEY - represented by the symbol ^ , may be thought of as a super shift key. When used in combination with other keys, special actions are performed.

7. ESCAPE KEY (Esc) - used to break or cancel previous instructions.

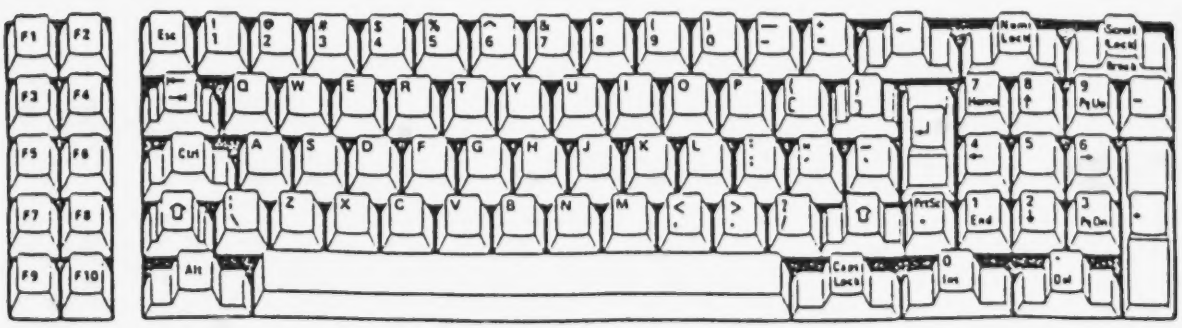
8. CAPS LOCK KEY - convenient for entering multiple upper case letters. This only works on alphabetic characters and not on numeric or special function keys. If you are getting the opposite case intended, toggle this switch to obtain desired case.

9. NUM LOCK KEY - locks in the numbers on the numeric keypad. This is useful for calculations or when entering long columns of figures.

10. DELETE KEY (Del) - deletes characters or spaces.

11. INSERT KEY (Ins) - inserts spaces.

12. PAGE UP / PAGE DOWN KEYS (PgUp / PgDn) - allow you to scroll up and down on the screen.



GETTING STARTED EXERCISE

OBJECTIVES FOR THE GETTING STARTED EXERCISE

1. The student should be able to boot the system.
2. The student should be able to display a directory using three directory commands.
3. The student should be able to log onto a specified disk drive.
4. The student should be able to format a disk.
5. The student should be able to format a disk with the system.
6. The student should be able to name a file.
7. The student should be able to copy a file.
8. The student should be able to backup program and data diskettes.
9. The student should be able to use a wild card.
10. The student should be able to prepare an applications program diskette for daily use.
11. The student should be able to erase a file.
12. The student should be able to enter the date at the system prompt.
13. The student should be able to enter the time at the system prompt.

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GETTING STARTED EXERCISE

This lesson explores the following procedures: booting the system, displaying directories, logging onto disk drives, formatting diskettes, formatting diskettes with the system, copying files, erasing files, and entering the time and date at the system prompt.

For this lesson, everything that the student is to type at the keyboard is underlined. Text appearing on the computer's screen during the course of the lesson is indicated in **bold** print.

BOOTING THE SYSTEM

When the system is booted, the computer reads the operating system files into memory so that the equipment can be used. Unless an A> prompt appears on the screen, the computer is not ready to receive instructions.

Boot the system by completing the following steps:

1. Turn on the power for the computer system.

   The ON/OFF switch on most MS-DOS computers is on the right, rear of the main box (CPU unit). The switch is positioned up for on and down for off. The monitor might also have a separate power switch which needs to be turned on.

2. In general, the computer has two disk drives. The drive on the left or top is drive A:. The drive on the right or bottom is drive B:. Usually a diskette containing the operating system (MS-DOS) is placed in drive A:.

   Place the MS-DOS diskette into drive A: and close the drive door.

   The diskette is oriented properly when the write protect notch is on the left and the manufacturer's label is facing up.

   (picture of disk being inserted into computer) - Insert 28

3. When the diskette containing the operating system is inserted into drive A:, the computer automatically loads the operating system. (If nothing happens after the diskette is inserted, boot the system. To boot the system, while holding down the Ctrl key and the Alt key, press the Del key.)

4. When a message appears on the screen requesting a date, indicate October 20, 1987 by typing 10/20/87 and press <RETURN>. The month, day, year format displayed on the screen must be used.

   If the date is not correctly entered, the computer responds:

   Invalid date
   Enter new date (mm-dd-yy):

   The date entry would have to be retyped.

   Pressing <RETURN> skips the date entry. However, entering the date every time the computer is booted is a good habit to acquire.

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5. The next message to appear on the screen requests the time. The time is entered in hours and minutes. The computer uses a 24-hour clock for this information. This means that 1:00 p.m. is entered as 13:00.

   Type 14:00 <RETURN> to indicate that the current time is 2:00 p.m.

   As with the date, the time information may be skipped by pressing <RETURN>. Entering the time when booting the computer is a good practice to develop.

6. The A> prompt appears on the screen indicating that the operating system has been loaded into the computer. The computer awaits further instructions. Instructions entered at the A> prompt may be typed in upper or lower case. Throughout these materials, commands entered at the system prompt will be indicated in upper case.

DISPLAYING A DIRECTORY

A listing of files stored on a diskette can be obtained by typing a directory command. The directory display includes the file name, the file extension, the size of the file, and the date and time that the file was created or altered.

Place an operating system diskette in drive A: and display a a list of the files on the diskette by entering each of the three directory commands shown below:

1. After the A> prompt, type DIR and press the <RETURN> key. A directory of the disk in drive A: appears on the screen.

   Example of a *DIR* display:

```
 Volume in drive A has no label
 Directory of  A:\

COMMAND  COM    23322   5-09-86  10:33a
VDISK    SYS     2585   4-23-86   2:58p
FORMAT   COM    10683   3-26-86   3:08p
CONFIG   SYS       43   7-14-86   1:03p
AUTOEXEC BAT       86   7-14-86   1:03p
PSC      COM     1456  11-08-83  11:51a
        6 File(s)    282624 bytes free
```


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2. After the A> prompt, type DIR/P and press the <RETURN> key. This command displays a listing of the directory one page at a time. Any key is pressed to display the next screen of file listings.

Example of a *DIR/P* display:

```
 Volume in drive A has no label
 Directory of  A:\

COMMAND  COM     23322   5-09-86  10:33a
ASSIGN   COM      1509   5-15-85  12:00a
ATTRIB   EXE      7438   5-15-85  12:00a
CHKDSK   COM      9435   5-14-85  12:02a
DEBUG    COM     15631   6-07-85  10:46a
SELECT   COM      8331  10-08-85  12:29p
DISKCOPY COM     12699   3-26-86   3:16p
DISKCOMP COM      2930   3-26-86   3:16p
EDLIN    COM      7261   5-14-85  12:02a
EXE2BIN  EXE      2816   5-15-85  12:00a
FIND     EXE     10579   4-16-85   9:49a
FC       EXE     14576   5-15-85  12:00a
PRINT    COM      8595  10-08-85   9:31a
RECOVER  COM      4050   5-14-85  12:02a
SHARE    EXE      7856   5-15-85  12:00a
SYS      COM      3879  10-08-85   9:32a
FORMAT   COM     10683   3-26-86   3:08p
CONFIGUR COM     22960  10-17-85   9:30a
ASGNPART COM     17624  10-04-85   2:41p
MODE     COM      8820   5-08-86   3:42p
TREE     COM      1827   1-28-86   9:52a
COMP     COM      3706   1-28-86   9:59a
RDCPM    COM      4909   6-03-85   1:55p
Strike a key when ready . . .
```

Press any key to display the next screen.

3. After the A> prompt, type DIR/W and press the <RETURN> key. This command displays the file names in five columns across the entire screen.

Example of a *DIR/W* Display:

```
 Volume in drive A has no label
 Directory of  A:\

COMMAND  COM     ASSIGN   COM     ATTRIB   EXE     CHKDSK   COM     DEBUG    COM
SELECT   COM     DISKCOPY COM     DISKCOMP COM     EDLIN    COM     EXE2BIN  EXE
FIND     EXE     FC       EXE     PRINT    COM     RECOVER  COM     SHARE    EXE
SYS      COM     FORMAT   COM     CONFIGUR COM     ASGNPART COM     MODE     COM
TREE     COM     COMP     COM     RDCPM    COM     SEARCH   COM     APPLY    COM
SORT     EXE     GRAFTABL COM     LABEL    COM     JOIN     EXE     SUBST    EXE
MORE     COM     DW3IN    COM
      32 File(s)     65536 bytes free
```


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CHANGING THE LOGGED DISK DRIVE

The system prompt indicates the default (active) disk drive. The letter displayed at the prompt is the active or logged drive. To log onto another disk drive, the drive letter followed by a colon is typed and the Return key is pressed. Log onto drive B: and return to drive A: by completing the following steps:

1. At the A> prompt, type B: and press the <RETURN> key.

2. A B> prompt appears on the screen and drive B: is the active drive.

3. To return to drive A:, type A: and press the <RETURN> key.

4. An A> prompt appears on the screen and drive A: is once again the active drive.

FORMATTING A DISK

Before using a newly purchased diskette, it must be formatted with the proper magnetic track markings. This is accomplished by completing the steps listed below:

1. The A> prompt must appear on the screen. If the A> prompt is not displayed, follow the instructions for booting the system as described at the beginning of this lesson.

2. Insert an MS-DOS disk with the FORMAT.COM file on it into drive A:. Close the disk drive door.

3. After the A> prompt, type FORMAT. Press the <RETURN> key to execute the command.

4. The red light on drive A: lights up and after a few seconds the computer replies:

   Drive to format? :

5. In response to the message prompt, type the letter B. The <RETURN> key does not need to be pressed.

6. The computer replies:

   Insert new diskette in drive B:
   and press return when ready.

7. Insert the disk to be formatted in drive B:. The write protect notch should be on the left, with the manufacturer's label facing up.

8. Press the <RETURN> key to begin the formatting process.

9. The red light on drive B: turns on to indicate that the formatting process is taking place.

10. When the formatting process is finished, the following message appears:

    Enter desired volume label (11 characters, RETURN for none)?

11. Press the <RETURN> key to indicate that a volume label is not needed. If a volume label were desired, 1 to 11 characters would be typed and the <RETURN> key pressed. The characters entered would appear as the volume label in a directory display of the disk.

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12. The computer then asks:

    Do you wish to format another disk (Y/N)?

13. To format another disk, a Y is typed to indicate yes. If the formatting process is to be stopped, an N is typed to indicate no. In this example, no more disks are to be formatted. Therefore, type N.

14. The A> prompt appears on the screen and the disk in drive B: is ready for use. Remove the disk from drive B: and print an F on it to indicate that it has been formatted.

FORMATTING A DISK WITH THE SYSTEM

To format a disk and transfer onto it the operating system files needed to boot the computer, the FORMAT/S command is used. The same 14 steps outlined above in the formatting process are followed. However, step #3 is modified as shown below:

After the A> prompt, type FORMAT/S.
Press the <RETURN> key to execute the command.

The FORMAT/S command formats a disk and then copies the essential operating system files onto the formatted disk. Two of the operating system files are hidden files and cannot be placed onto a disk using the COPY command.

A screen display of a typical FORMAT/S process appears below:

```
A>FORMAT/S
                FORMAT version 3.04
Copyright(C) 1985 Zenith Data systems Corporation

Drive to format? B:

Insert new disk in drive B:
and press RETURN when ready

System transferred


Enter desired volume label (11 characters, RETURN for none)?

    362496 bytes total disk space
     61440 bytes used by system
    301056 bytes available on disk

Do you want to format another disk (Y/N)?n
A>
```


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A directory display of the disk formatted with a system is shown below:

```
A>DIR B:

 Volume in drive B has no label
 Directory of  B:\

COMMAND  COM    23322   5-09-86   10:33a
       1 File(s)    301056 bytes free
```

The FORMAT/S screen display indicated that 61,440 bytes were used by the system files. The directory display of the disk in drive B: formatted with the system indicates that the size of the COMMAND.COM file is 23,322 bytes. The discrepancy of 38,118 bytes is a result of the two hidden files which were copied during the formatting process. Hidden files are not displayed by the DIR command.

BACKING UP PROGRAMS AND DATA

A backup copy is a second copy of a diskette or a file. Making a backup copy is a safety precaution which should become routine. Backing up diskettes saves hours of work should a disk become damaged or misplaced. Files can be copied from a diskette in drive A: to a diskette in drive B: by several means.

To copy a single file from drive A: to drive B:, the following command would be executed:

At the A> prompt, *COPY FILENAME.EXT B: <RETURN>* would be typed.

If the file TEST.TXT were to be copied from a diskette in drive A: to a diskette in drive B:, the following command would be typed:

At the A> prompt, *COPY TEST.TXT B: <RETURN>* would be typed.

When copying several files, a wildcard (*) is very useful. The asterisk is used to indicate any combination of letters. Thus, if all of the files having the extension .COM were to be copied from drive A: to drive B:, the following command would be typed:

At the A> prompt, *COPY *.COM B: <RETURN>* would be typed.

To copy all of the files from drive A: to drive B:, the following command would be typed:

At the A> prompt, *COPY *.* B: <RETURN>* would be typed.

For this portion of the exercise, a formatted blank diskette and the diskette of exercise data files provided with this book will be used. If a formatted blank diskette is not available, refer to the section in this exercise on *formatting a disk* for instructions on how to create a formatted blank diskette.

The following steps will copy the files located on the exercise data disk to the formatted blank diskette.

1. If an **A>** prompt is not displayed on the screen, boot the computer or log onto drive A:.

2. When the **A>** prompt is displayed on the screen, insert the disk containing the exercise data files in drive A: and the blank formatted diskette in drive B:.

3. Type DIR and press <RETURN>.

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4. One of files displayed in the directory is the **CHART** file. Copy the **CHART** file from the disk in drive A: to the disk in drive B: by typing COPY CHART B: <RETURN>.

5. The screen displays:

```
A>COPY CHART B:
     1 File(s) copied

A>
```

6. Type DIR B: <RETURN> to display the directory of drive B:. The **CHART** file is listed on the directory for drive B:.

7. Two of the files on the exercise data disk are the **BATCH** file and the **BASICLIT** file. To copy both of the article files to the disk in drive B: enter the following command:

   COPY B*.* B: <RETURN>

8. The files are listed on the screen as they are copied. When the process has been completed, the screen displays:

```
A>COPY B*.* B:
BATCH
BASICLIT
            2 File(s) copied

A>
```

9. Display a directory of drive B: by typing DIR B: <RETURN>. The **CHART**, **BATCH**, and **BASICLIT** files reside on the disk in drive B:.

10. To create a backup disk of all the exercise data files, copy all of the files from drive A: to drive B:. This is accomplished by executing the following command:

    COPY *.* B: <RETURN>

11. The files are listed on the screen as they are copied. When all of the files have been copied, the total number of files copied is displayed.

12. Remove the original diskette containing the exercise data files from drive A:. Remove the backup copy of the exercise data files from drive B: and label it Backup Exercise Data Files. This backup diskette will be used in the next portion of this lesson.

ERASING FILES

Files can be removed from a disk by using the ERASE or DEL command. To avoid errors, the drive storing the file to be erased should be the active drive. The following command is used to erase a file:

At the A> prompt, type **ERASE FILENAME <RETURN>**.

At the B> prompt, type **ERASE FILENAME <RETURN>**.

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A wildcard can be used to delete a file. Thus, if all of the files having the extension .COM were to be erased from drive B:, the following command would be typed:

At the B> prompt, type **ERASE *.COM <RETURN>**.

To erase all of the files on a disk in drive A:, the following command would be typed:

At the A> prompt, type **ERASE *.* <RETURN>**.

The computer wants to make sure that the disk is to be cleared of all files and asks: Are you sure (Y/N)? A Y would be typed and the <RETURN> key would be pressed to erase all of the files on the disk.

For this portion of the exercise, the Backup Exercise Data Files disk created during the COPY portion of this lesson is needed. By completing the following steps, all the files on this backup disk will be erased.

1. If an **A>** prompt is not displayed on the screen, boot the computer or log onto drive A:.
2. When the **A>** prompt is displayed on the screen, insert the Backup Exercise Data Files disk in drive A:. (Do not use the *original* diskette.)
3. Type DIR and press <RETURN>.
4. One of files displayed in the directory is the **CHART** file. Erase the **CHART** file from the disk in drive A: by typing ERASE CHART <RETURN>.
5. Type DIR <RETURN> to display the directory of drive A:. The **CHART** file is no longer listed on the directory for drive A:.
6. Erase both the **BATCH** file and the **BASICLIT** file from drive A: by typing ERASE B*.* <RETURN>.
7. Display a directory of drive A: by typing DIR <RETURN>. The **CHART**, **BATCH**, and **BASICLIT** files no longer reside on the disk in drive A:.
8. To erase all of the exercise data files from drive A:, type ERASE *.* <RETURN>
9. The computer responds: **Are you sure (Y/N)?**
10. Type Y for yes and press <RETURN>.
11. To confirm that all the files have been erased, type DIR and press <RETURN>. The screen displays **File not found**. This formatted diskette no longer contains any files. It can be used for other purposes.

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ENTERING THE DATE

The date entered when the system was booted can be changed without restarting the computer. Enter April 1, 1987 by completing the following steps:

1. At the A> prompt, type DATE and press the <RETURN> key.

2. The monitor displays the date currently logged and requests a new date entry using the format shown below:

   Current date is Tue 1-01-1980
   Enter new date:

3. Type 4/1/87 and press the <RETURN> key.

April 1, 1987 has been entered as the current date. Any files saved or altered will have this date designation until the date is changed or the system is rebooted.

ENTERING THE TIME

The time entered when the system was booted can be changed without restarting the computer. Enter 9:30 p.m. by completing the following steps:

1. At the A> prompt, type TIME and press the <RETURN> key.

2. The monitor displays the time currently logged and requests a new time entry using the format shown below:

   Current time is 0:20:11.32
   Enter new time:

3. Type 21:30 and press the <RETURN> key.

The computer uses a 24-hour clock. The time entered was 21:30 hours or 9:30 p.m. Seconds were not included in the time entry. However, they could have been. Any files saved or altered will have this time designation until the time is changed or the system is rebooted.

CONCLUSION

The basics of getting started have been covered in this exercise. Place an operating system disk or an applications program disk in drive A: and a blank diskette in drive B:. Practice the various commands reviewed in this lesson.

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REVIEW OF OFTEN USED COMMANDS

1. To prepare a newly purchased diskette for use in your computer, it must first be formatted. Formatting places the magnetic tracks and sectors on your diskette. To format a disk, the operating system diskette is placed in drive A: and your newly purchased diskette is placed in drive B:. The following command is issued:

   A>format <RETURN>

   A format command can also be used to erase *ALL* the files from a diskette, giving you an entirely clean diskette to reuse for other data. Think it through carefully before reformatting a diskette. You don't want to erase valuable material!

2. You are at home and are exasperated with hauling your operating system diskette in and out of drive A:. It's time to place your system on the same diskette as that containing your program. To do this, place your system diskette in drive A:, and your newly purchased diskette in drive B:. Issue the following command:

   A>format/s <RETURN>

   This command formats your diskette and also places the operating system on your diskette. We were unable to do this in the workshop as MS-DOS is proprietary and we cannot freely distribute this program.

   Now we want to place an applications program on this diskette.

   Place your program diskette in drive A: and your formatted disk with the system on it in drive B:. Issue the command:

   A>copy *.* b:

   In some cases, you may have insufficient disk space. If this occurs, you will need to copy each file name individually selecting only those files needed to run the program. For instance, you could eliminate all *DOC* files. You do not need documentation files which print the instruction manual in order to use the program.

3. To copy a single file onto a diskette, you will need to put the diskette containing desired file into drive A: and your working diskette into drive B:. Issue the command:

   A>copy (the name of the file) b:

4. To copy all the files contained on one diskette onto another diskette, issue the following command:

   A>copy *.* b:

   This is an easy way to make a backup copy of your work.

5. To erase a single file from a diskette, issue the following command:

   A>erase (the name of the file) b:

SPREADSHEETS

A spreadsheet will probably be the tool you will use for any task involving numbers. A spreadsheet allows you to create large groups of interrelated numbers. Once this has been accomplished, changing a single figure will cause all other numbers dependent upon the one changed to be quickly recalculated. The spreadsheet can become extremely complex. However, its concept is a simple one.

Visualize a spreadsheet as a grid full of boxes. Numbers and other information may be placed directly into the boxes from the keyboard. Once the information is in a box it can be a source of information to be used for formulas in other boxes. When a box containing a formula is displayed on the screen, the result of the formula will be seen, not the formula itself. If any of the numbers in the source boxes are changed, the display for the box with the formula will reflect this change.

For example, let us assume we have a small spreadsheet program that has three boxes. Each box has a name that can be used to refer to the information in that box. The names of our boxes are A, B, and C. If we were to put the number 5 in box A and put the number 2 in box B, we could then combine this information in box C by entering the formula A + B into box C. Box C would then display the number 7. We could change the formula in box C to read (A+B)*2 (the * means multiply on most computers). Box C would now read 14. If we next changed the number in box A from 5 to 4, box C would read 12. [(4+2)*2=12)].

As you can well imagine, our small spreadsheet can be made even more complicated. Many boxes (or cells) can depend on information from formulas in other cells. Sophisticated models and projection formulas can be created using this capability. The capability of a spreadsheet to perform a whole series of calculations based on both formulas and numbers makes it possible to do in minutes or seconds what formerly took accountants days or weeks.

A spreadsheet is perfect for doing what users call "what ifs." Suppose you were considering the purchase of a house and wanted to determine the monthly payments. Using the proper financial formulas, you could create a program allowing entery of an interest rate, the number of repayment years, and the amount borrowed. In seconds, the spreadsheet would display the mortgage payment amount based upon those numbers. You could then change one or more of the numbers to see what happens to the payment level as the interest rate goes down, the length of the mortgage is increased, or the amount of the loan is made greater.

Many spreadsheet programs can create graphs. Unfortunately, ExpressCalc can print only rudimentary bar graphs. Other programs can produce line, bar, and pie charts in many different formats. If the computer has a color monitor, the bars representing several items can be shown in multiple colors.

There are two ways to create paper copies of a graph. One is to print out a copy using a dot matrix printer. This type of printer will only give you a black and white representation of the charts using different crosshatchings to simulate the varying colors shown on the monitor. The other method of obtaining a hard copy is by using a plotter. A plotter is a device which holds a pen to a piece of paper and draws lines on the paper as instructed by the computer. Most plotters are capable of automatically changing the pen that it uses. This makes it possible for the plotter to draw a graph using multiple colors.

Now that you understand the basic concepts of a spreadsheet, it's time to try using a software package in order to see these ideas put to practical use. Once you have mastered a few basic commands, you will wonder how you ever got along without using a spreadsheet!

FUNCTIONS OF ELECTRONIC SPREADSHEETS

Creating an electronic spreadsheet involves the opening and original entry of the labels, formulas, and values in the spreadsheet. Once a file has been opened, a blank spreadsheet appears, ready for data entry.

Revising is the deletion, replacement, and insertion of entries in an electronic spreadsheet. Entries can be changed by row, column, or cell, including formulas, values, or variables.

Formatting is the adjustment of the display formats. Format options available in many electronic spreadsheets include numeric display (integer, general or ordinary, and exponent numbers), precision (number of decimal places shown in a number), column width, and display of label borders and formulas.

Printing is producing a copy of a spreadsheet as output. Output can be sent to a disk file where it is stored, or to a printer where a paper copy is printed.

File Handling includes the consolidation and loading of files into other spreadsheets. Files can be copied, deleted, or moved around.

ELECTRONIC SPREADSHEET DEFINITIONS

Row	is a horizontal area across the page (described by integer numbers e.g. 1, 2, 6, 36).
Column	is a vertical area from the top of the page to the bottom (described by alphabetic letters e.g. C, F, AB, Z).
Cell	is an intersection of a column and a row, each of which can hold a value, a formula, or a label (described by combinations of letters and numbers; C2 says that the cell is the 3rd column and the 2nd row).
Formula	is the symbolic expression of a rule or principle or calculation such as +C14-C17 (which says in effect subtract the contents of cell C17 from the contents of cell C14 and store the results in the cell where the cursor is currently located).
Label	is descriptive text used primarily to provide headings for rows and columns and can be either numeric or alphabetic.
Value	is a number that you enter in the spreadsheet, and is sometimes called a constant because it is not changed as a result of calculating the formulas.
Variables	are quantities that are the result of a calculation by a formula. Every time the values that comprise the formula are changed and the formula is recalculated, the resulting variable is subject to change.

EXPRESSCALC COMMAND SUMMARY

ACTIVE CELL (Cursor) MOVEMENT

Up arrow	Ctrl-E	Moves cursor up one row
Down arrow	Ctrl-X	Moves cursor down one row
Right arrow	Ctrl-D	Moves cursor right one column
Left arrow	Ctrl-S	Moves cursor left one column
Home		Moves cursor to upper left corner of screen
End		Moves cursor to the lower right corner of screen
Page Up	Ctrl-R	Moves cursor back one screen
Page Down	Ctrl-C	Moves cursor forward one screen
	Ctrl-W	Moves screen down one row without moving cursor
	Ctrl-Z	Moves screen up one row without moving cursor
	Ctrl-N	Inserts row above row where cursor is located
	Ctrl-Y	Deletes row where cell cursor is located
=	Ctrl-Q	Prompts for a cell, and jumps to that cell

SPECIAL KEYS

=	Starts a cell jump (GO TO) entry
!	Forces recalculation of spreadsheet
/	Displays command menu

ARITHMETIC OPERATORS

()	Expression modifier
^	Raise to a power
*	Multiplication
/	Division
+	Addition
-	Subtraction

FUNCTION ARGUMENTS

(value)	The value in a cell, a constant, or a combination of constants and cells
(exp)	A logical expression of cell contents and/or constants
(range)	A partial row or partial column
(list)	Could be a combination of values and ranges

COMMAND MENU (Type _/_ to display command menu line)

ARRANGE	Sort a range of rows or columns into ascending or descending sequence
BLANK	Blank out (erase) contents of one or more cells
CONFIGURE	Reconfigure screen,
DELETE	Delete a row or column
EDIT	Edit the contents cell
FORMAT	Change display characteristics of cell(s)
GLOBAL	Change various spreadsheet settings
INSERT	Insert a row or column
LOAD	Load a file into spreadsheet area from disk
PRINT	Print spreadsheet
QUIT	Exit from ExpressCalc
REPLICATE	Copy cells, and optionally adjust
SAVE	Save a spreadsheet onto disk
TITLE	Lock titles horizontally and/or vertically
XTERNAL	Retrieve data from other files or databases
ZAP	Clear spreadsheet area

BUILT-IN FUNCTIONS

ABS	Absolute value
ATN	Arctangent
AVERAGE	Average of a range of numbers
COS	Trigonometric cosine
COUNT	Count of a range of numbers
CPI	Change characters per inch on printer
EXP	Mathematical number e raised to the x power
FIX	Integer (ignores sign)
IF	Conditional test; if...then...else
INT	Integer (true integer; i.e. INT (-2.5)=-3)
KEYWORD	Display current date, time, page number
LOG	Natural logarithm
LOOKUP	Table lookup based on key value
LPI	Change lines per inch on printer
MAX	Maximum value in a range of numbers
MIN	Minimum value in a range of numbers
NOLF	No line feed on this print line
NOPRINT	Do not print this line
NPV	Net present value of a range of numbers
PAGE	Page break or conditional page break on printer
PAYMENT	Compute payment; given principal, rate, periods
PERIODS	Compute periods; given principal, payment, rate
PRINCIPAL	Compute principal; given payment, rate, periods
RANDOM	Random number
RATE	Compute rate; given principal, payment, periods
ROUND	Round a number to specified decimals
SGN	Sign of a number
SIN	Trigonometric sine function
SQR	Square root
STDEV	Compute standard deviation of a range
SUM	Sum of a range of numbers
TAN	Trigonometric tangent

EXPRESSCALC 3.1
BEGINNING EXERCISE

This lesson describes how to load and use the spreadsheet ExpressCalc. The topics covered include: loading the program, moving the cursor, entering text, values, and formulas; deleting the contents of a cell, displaying the command menu, formatting a cell, replicating a cell, recalculating the spreadsheet, saving a spreadsheet file, printing the spreadsheet, clearing the screen, and exiting the program. The topics will be explored by creating a simple income statement.

STARTING THE LESSON

1. Before the ExpressCalc program can be used to turn a computer into a spreadsheet, the operating system must be loaded into the computer. If a system prompt (A>) is not present on the screen, follow the steps described in the ***Getting Started*** lesson.

Boot: the computer

2. Insert the ExpressCalc program diskette into drive A: and a formatted diskette into drive B:. The diskette in drive B: will be the working data disk. Any files created will be saved onto this disk.

Insert: program disk in drive A:
Insert: data disk in drive B:

3. For this lesson, everything to be typed at the keyboard will be underlined. Text appearing on the computer's screen during the course of the lesson is indicated in **bold** print.

4. For this exercise, a simple income statement is to be created. The final format for the income statement is shown below:

```
                              A          B
1  REVENUE                 50,000.00
2
3  EXPENSES:
4    Merchandise           10,000.00      24.23
5    Utilities              6,000.00      14.54
6    Wages                 18,000.00      43.61
7    Insurance              2,000.00       4.85
8    Rent                   5,278.95      12.79
9                           =========     ======
10 TOTAL EXPENSES:         41,278.95     100.02
11
12 GROSS PROFIT:            8,721.05
```

LOADING EXPRESSCALC

1. At the A> prompt, type Calc. (Case does not matter.)

   Type: Calc

   Typing **Calc** is a command to MS-DOS telling it to load ExpressCalc into the computer and begin executing the program.

2. Execute the above command by pressing the Carriage Return key. The Return key signals to the computer that the command has been completely typed and needs to be carried out. The **Return** key and ***Enter*** key, if the keyboard has both, are interchangeable. These lessons will use ***<RETURN>*** to indicate that either the Return key or Enter key is to be pressed.

   Press: <RETURN>

3. After a short pause as the program loads, the ExpressCalc copyright information is displayed on the screen. After another pause, a spreadsheet appears on the screen.

CURSOR MOVEMENT

1. The screen displays Columns A-G and rows 1-21. The cursor is the rectangle on the screen which is located at cell A1. The position of the cursor on the spreadsheet is changed by pressing the arrow keys. The arrow keys are located on the right of the keyboard. (The arrow keys also have numbers on them.) Press the right arrow key enough times to move it past the right edge of the screen. The program keeps the cursor displayed on the screen by sliding the columns to the left as the cursor is moved to the right. The cursor can be positioned as far right as column BL. The down arrow key can move the cursor to row 256. When the bottom of the screen is reached, ExpressCalc slides rows up the screen to keep the cursor visible. Thus, an ExpressCalc spreadsheet can extend to 64 columns and 256 lines. The cursor location is indicated in the blank area of the screen below row 21.

   Press: right arrow key

2. Experiment with the right, left, up, and down arrow keys by pressing each of them several times. The cursor location indicator at the bottom, left of the screen indicates the cursor cell location.

   Try: right, left, up, and down arrow keys

3. The arrow keys could be used to reposition the cursor at cell A1. However, there is a faster way to accomplish this. Typing the = key followed by the desired cell coordinate, positions the cursor at the indicated cell.

   Press the = key.

   Press: =

   The = is displayed on the ***entry line*** following the > symbol.

   The ***message*** line indicates the amount of K remaining in memory and the message:

   Go to coordinate:

4. Type A1 and press the <RETURN> key to position the cursor at cell A1.

Type: A1
Press: <RETURN>

The **entry line** displays the characters typed at the keyboard. Characters shown at the entry line are not acted upon and placed in the display area until the <RETURN> key is pressed. The **message line** provides information and prompts for the user

```
          A          B          C          D
1
2
3
4                This is the display area
5
6

xxxK  This is the message line
      > This is the entry line
```

ENTERING TEXT

To enter text, position the cursor at the desired cell location and type the entry. The ***Caps Lock*** key is toggled on for text which is to appear in upper case. When the text on the ***entry line*** is displayed in the desired format, pressing the <RETURN> key places the text entry at the cursor location in the ***display area***. Once the text is displayed, the ***entry line*** becomes blank and the ***message line*** indicates the (text) which was entered for that cell. A " precedes the text entry on the message line. This character is automatically inserted by ExpressCalc when text is entered. If digits are entered which are to be treated as text rather than numerical values, a " must precede the entry. For instance, the year 1987 would be typed **"1987**. A social security number would be entered as **"111-22-3333**. Entering the year as a number would probably not create a problem. However, entering the social security number without the quotes causes the screen to display **-3,244.00** , the result of subtracting 22 and 3333 from 111.

1. To enter the label ***REVENUE*** in cell A1, the following steps must be completed:

   a. The cursor is currently positioned at cell A1. Press the Caps Lock key to turn on upper case.

   Press: Caps Lock

   b. Type REVENUE .

   Type: REVENUE

   The ***entry line*** displays:

   A1 >REVENUE

c. Press the <RETURN> key.

Press: <RETURN>

REVENUE appears in cell A1 of the ***display area*** and the ***message line*** displays:

(Text) "REVENUE

ExpressCalc recognizes **REVENUE** as text and automatically assigns a " preceding the word **REVENUE**.

If an error is made in a text entry ***before*** the <RETURN> key is pressed, the Back Space key is used to position the cursor at the desired character location and the entry is corrected. The new text replaces the text displayed on the entry line.

If an error is made in a text entry ***after*** the <RETURN> key is pressed, the error appears in the display area of the screen. The cursor must be repositioned at the cell containing the incorrect text entry. The correct text is typed. Pressing the <RETURN> key replaces the incorrect entry in the display area with the new entry.

2. Press the down arrow key to position the cursor at cell A2. This cell is blank. Do not type an entry here.

Press: down arrow key

3. To enter the label ***EXPENSES:*** in cell A3, complete the following steps:

a. Press the down arrow key to position the cursor at cell A3.

Press: down arrow key

b. Verify that Caps Lock is on. Type EXPENSES: and press the <RETURN> key to enter the text in the display area at the cursor location. As in step (a) above, the entry line and message line change to reflect the current entry.

Type: EXPENSES:

Press: <RETURN>

The Caps Lock key only gives upper case to letters. To obtain the colon (:), the Shift key must be pressed.

4. To enter the label ***Merchandise*** in cell A4, complete the following steps:

a. Press the down arrow key to position the cursor at cell A4.

Press: down arrow key

b. Press the space bar twice to indent this entry two spaces.

Press: space bar twice

c. Press the Caps Lock key to toggle off upper case. Type Merchandise and press the <RETURN> key.

Press: Caps Lock
Type: Merchandise
Press: <RETURN>

5. To enter the label ***Utilities*** in cell A5, complete the following steps:

a. Position the cursor at cell A5.

Position cursor: cell A5

b. Press the space bar twice to indent this entry two spaces.

Press: space bar twice

c. Type Utilities and press the <RETURN> key.

Type: Utilities
Press: <RETURN>

6. To enter the label ***Wages*** in cell A6, complete the following steps:

a. Position the cursor at cell A6.

Position cursor: cell A6

b. Press the space bar twice to indent this entry two spaces.

Press: space bar twice

c. Type Wages and press the <RETURN> key.

Type: Wages
Press: <RETURN>

7. To enter the label ***Insurance*** in cell A7, complete the following steps:

a. Position the cursor at cell A7.

Position cursor: cell A7

b. Press the space bar twice to indent this entry two spaces.

Press: space bar twice

c. Type Insurance and press the <RETURN> key.

Type: Insurance
Press: <RETURN>

8. To enter the label ***Rent*** in cell A8, complete the following steps:

a. Position the cursor at cell A8.

Position cursor: cell A8

b. Press the space bar twice to indent this entry two spaces.

Press: space bar twice

c. Type Rent and press the <RETURN> key.

Type: Rent
Press: <RETURN>

9. Leave cell A9 blank.

10. To enter the label ***TOTAL EXPENSES:*** in cell A10, complete the following steps:

a. Position the cursor at cell A10.

Position cursor: cell A10

b. Type TOTAL EXPENSES: and press the <RETURN> key.

Type: TOTAL EXPENSES:
Press: <RETURN>

11. Leave cell A11 blank.

12. To enter the label ***GROSS PROFIT:*** in cell A12, complete the following steps:

a. Position the cursor at cell A12.

Position cursor: cell A12

b. Type GROSS PROFIT: and press the <RETURN> key.

Type: GROSS PROFIT:
Press: <RETURN>

ENTERING VALUES (Numbers)

The labels for the income statement are now in place. Enter the values associated with each of labels in the corresponding B column cells.

1. **Position the cursor at cell B1 by pressing the = key and type B1. Press <RETURN> to execute the command.**

   Press: =
   Type: B1
   Press: <RETURN>

   Revenue is $50,000.00. To enter this figure, type 50000 and press <RETURN>.

   Type: 50000
   Press: <RETURN>

   The value in the display area is shown as 50,000.00 . ExpressCalc automatically assigns two decimal places and a comma separating the thousands. This is the default setting and is an acceptable format for the figures being entered. If desired, the setting could be modified through the use of the Format command.

2. **Position the cursor at cell B4.**

   Position cursor: cell B4

   Merchandise expenses total $10,000.00 Type 10000. Instead of pressing <RETURN> to display the entered value, press the down arrow key.

   Type: 10000
   Press: down arrow key

   When the down arrow key is pressed, the value on the entry line is moved to the display area and the cursor is positioned at the next cell.

   When the $10,000.00 Merchandise figure was entered, the last two letters of the Merchandise label disappeared from the screen. Column A is not wide enough to display all of the characters of this label. After all of the Expense figures have been entered, column A will be reformatted to a wider width.

3. **The cursor is located at cell B5. Utilities costs are $6,000.00. Type 6000 to enter the Utilities expenses and press the down arrow key.**

   Type: 6000
   Press: down arrow key

4. **Wages total $18,000.00. The cursor is located at cell B6. Type 18000 and press the down arrow key to enter this figure.**

   Type: 18000
   Press: down arrow key

5. **The cursor is located at cell B7. Insurance costs are $2,000.00. Type 2000 and press the down arrow key to enter this value.**

   Type: 2000
   Press: down arrow key

6. **Rent totals $5,278.95. The digits after the decimal point must be typed or ExpressCalc defaults to two zeros. The cursor is located at cell B8. Type 5278.95 and press <RETURN> to enter the value.**

   Type: 5278.95
   Press: <RETURN>

FORMAT COMMAND

Three of the labels are too wide for the 11-character default width allocated to column A. Therefore, the width of column A needs to be increased.

Changing the width of a column is done with the ***Format*** command. To use the Format command, or any other ExpressCalc command, the command menu line must be displayed on the screen.

1. To activate the command menu line, the **/** key is pressed. On most keyboards, this symbol is located on the same key as the question mark. Press the _/_ key. After a short pause, the following command menu appears on the ***message line*** at the bottom of the screen:

Type: /

```
Arrange  Blank   Configure  Delete     Edit   Format  Global  Insert
Load     Print   Quit       Replicate  Save   Title   Xternal     Zap
```

   Each of these commands begins with a different letter. Typing the first letter of a command is enough to identify it.

2. To change the width of column A, the ***Format*** command is used.

   a. Press the F key to activate the Format command menu line. (The **F** key can be typed as upper or lower case.)

   Type: F

   The message line displays:

   Enter range to be formatted (or ALL)

   b. The entire spreadsheet does not need to be reformatted. Therefore, ALL is not typed. Formatting needs to affect column A, rows 1 through 12. To accomplish this, type A1:A12 <RETURN>.

   Type: A1:A12
   Press: <RETURN>

   This entry indicates that everything from cell A1 through cell A12 is to be formatted. Pressing the Return key enters the information.

   The entry line displays:

   >Format,A1:A12,

   The message line displays:

```
Decimals   Width      Justify   Commas      $          (       %
Protect    Unprotect  Hide      Bargraph    Zero-blank
```

   c. The width of the column needs to be changed. Type W. The Return key does not need to be pressed as W is one of the available options and ExpressCalc recognizes W as a valid choice.

   Type: W

The entry line displays:

>Format,A1:A12,Width,11

The message line displays:

Enter column width (0 to 75)

d. A column can measure from 0 to 75 characters in width. The cursor is located on the first 1 of the digit 11. To change the width indication, type the desired width, 20 , over the 11 and press <RETURN>.

Type: 20
Press: <RETURN>

Column A has expanded in width and the **Merchandise** label is fully displayed.

3. Justification, decimal locations, comma display, and other parameters affecting column A could be modified from this point within the Format command. Experiment with the justification feature.

a. Display the labels in Column A as right-justified.

Type J to Justify.

Type: J

The message line displays:

Right-justify, Left-justify or Center. (Press ENTER to use global default.)

The entry line displays:

>Format,A1:A12,Justify,

Type R to Right-justify the labels in Column A.

Type: R

The display area shows all of the labels in Column A lined up at the right edge of the column.

b. Next, center the labels in Column A.

Type J to Justify.

Type: J

The message and entry lines show the same display as in step (a) above.

Type C to Center the labels.

Type: C

The display area shows all of the labels in Column A centered within the column.

c. Now, return the labels to the original Left-justified display.

Type J to Justify. **Type:** J

The message and entry lines show the same display as in step (a) above.

Type L to left-justify the display. **Type:** L

d. To exit the Format mode, press the Esc key. **Press:** Esc

ENTERING FORMULAS

Labels have been entered in Column A. A quotation mark precedes a label or text entry. Values have been entered in Column B. A quotation mark does not precede a value entry. To determine the total expense figure which is to be displayed in cell B10, a formula needs to be entered in cell B10. As with a value entry, a quotation mark does not precede a formula entry.

1. To find the sum of the values entered in cells B4, B5, B6, B7, and B8 and to display the result in cell B10, the following steps must be completed:

   a. Position the cursor at cell B10. **Position cursor:** cell B10

   b. A formula that could be entered is:

   B4+B5+B6+B7+B8

   As there are only 5 figures, the formula is not too lengthy. However, if more figures were involved, the formula would be rather cumbersome. ExpressCalc recognizes certain built-in functions. The ***SUM*** function is used to add the numbers in a range.

   Enter the above formula using the built-in ***SUM*** function. Type SUM(B4:B8) and press <RETURN>. **Type:** SUM(B4:B8) **Press:** <RETURN>

   The formula adds the numbers located in cells B4 through B8 and places the calculated answer in cell B10.

   The word, **CALCULATING**, flashes quickly across the message line.

   Once the calculation has occurred, **41,278.95** appears in the display area in cell B10.

   The message line displays:

   (Formula) SUM(B4:B8)

The entry of a given cell is displayed in the message line when the cursor is located on that cell. In this case, a formula is displayed in the message line when the cursor is positioned at cell B10. This enables the user to verify the procedures used in developing the income statement.

2. To determine the total Gross Profit (cell B12), Total Expenses (cell B10) must be subtracted from Revenue (cell B1).

   a. Position the cursor at cell B12.

   Position cursor: cell B12

   b. Type B1-B10 and press <RETURN>.

   Type: B1-b10
   Press: <RETURN>

   The word, **CALCULATING**, flashes quickly across the message line.

   Once the calculation has occurred, **8,721.05** appears in the display area in cell B12. The message line displays:

   (Formula) B1-B10

3. To determine what percentage the Merchandise Expenses (cell B4) are of the Total Expenses (cell B10), the following steps are completed:

   a. Position the cursor at cell C4.

   Position cursor: Cell C4

   b. Type B4/B10*100 and press <RETURN>.

   Type: B4/B10*100
   Press: <RETURN>

   This formula divides the Merchandise Expenses (cell B4) by the Total Expenses (cell B10) and then multiplies this figure by 100 placing the calculation in a percentage format.

   The word, **CALCULATING**, flashes quickly across the message line.

   Once the calculation has occurred, **24.23** appears in the display area in cell C4.

   The message line displays:

   (Formula) B4/B10*100

REPLICATE COMMAND

To determine what percentage the Utilities (cell B5), Wages (cell B6), Insurance (cell B7), and Rent (cell B8) Expenses are of the Total Expenses (cell B10), similar formulas would be entered:

```
Cell C5    would contain the formula    B5/B10*100
Cell C6    would contain the formula    B6/B10*100
Cell C7    would contain the formula    B7/B10*100
Cell C8    would contain the formula    B8/B10*100
```

Each of the above formulas could be entered individually. However, ExpressCalc has a more efficient means of handling this task. The ***Replicate*** command enables a cell entry to be repeated in a cell or a range of cells.

To replicate the formula located in cell C4, complete the following steps:

1. Press / to activate the command menu line.

   Press: /

2. Type R to select the Replicate command.

   Type: R

   The entry line displays:

   >/Replicate,

   The message line displays:

   Enter the "from" range

3. The formula located in cell C4 is the formula which is to be replicated. Type C4 and press <RETURN>.

   Type: C4
   Press: <RETURN>

   The entry line displays:

   >Replicate,C4,

   The message line displays:

   Enter the "to" range

4. The formula is to be placed in cells C5, C6, C7, and C8. Type C5:C8 and press <RETURN>.

   Type: C5:C8
   Press: <RETURN>

   The entry line displays:

   >/Replicate,C4,C5:C8,

   The message line displays:

   Replicating cell C4. Adjust B4 Yes or No? (or A to adjust all)

5. The four formulas displayed in the introductory paragraph of the Replicate Command show that the portion of the formula reading **B4** does indeed need to be adjusted to indicate cells B5, B6, B7, and B8. Therefore, type Y to indicate Yes.

   Type: Y

   The entry line displays:

   >/Replicate,C4,C5:C8,

   The message line displays:

   Replicating cell C4. Adjust B10 Yes or No? (or A to adjust all)

6. The four formulas displayed in the introductory paragraph of step (1) indicate that the portion of the formula reading B10 remains constant. The individual expenses are divided in each case by the Total Expenses. Therefore, this section of the formula does not need to be adjusted. Type N to indicate No.

Type: N

The word, **CALCULATING**, flashes quickly across the message line.

Once the calculation has occurred, the following values are displayed in cells C4 through C8:

```
24.23
14.54
43.61
 4.85
12.79
```

7. To verify that the replicate process was performed correctly, total the percentages of cells C4 through C8 and display the total percent in cell C10.

   a. Position the cursor at cell C10.

Position cursor: cell C10

   b. To total the values in cells C4 through C8, type SUM(C4:C8) and press <RETURN>.

Type: SUM(C4:C8)
Press: <RETURN>

   The word, **CALCULATING**, flashes quickly across the message line.

   The message line displays:

   (Formula) SUM(C4:C8)

   Once the calculation has occurred, **100.02** is displayed in cell C10. The total is not 100.00 due to the rounding of numbers to two decimal places.

RECALCULATING THE SPREADSHEET

The spreadsheet recalculates the formulas when a new figure is entered. Experiment with the entered formulas by completing the following steps to change Merchandise Expenses from $10,000.00 to $6,000.00:

1. Position the cursor at cell B4.

Position cursor: Cell B4

2. Type 6000 and press <RETURN>.

Type: 6000
Press: <RETURN>

The word, **CALCULATING**, flashes quickly across the message line.

The message line displays:

(Value) 6000

Cell B4 displays:

6,000.00

Cell C10 displays:

90.33

3. As a number closely approaching 100 should appear in cell C10, the total percent, 90.33, is clearly incorrect. When ExpressCalc recalculates a spreadsheet, it does so either proceeding down columns or across rows. Depending upon the location of the changed entry and the nature of the formulas contained in a spreadsheet, all formulas may not be correctly recomputed. To ensure recalculation of the entire spreadsheet after a change has been made, the exclamation mark (!) key (hold down the Shift key and press the number 1 key) must be typed.

To force a recalculation of the displayed income statement, type !.

Type: !

The word, **CALCULATING**, flashes quickly across the message line.

The entire spreadsheet is recalculated and cell C10 displays:

99.98

SAVE COMMAND

At present, this income statement resides only in RAM. If the power goes off or if the ExpressCalc program is exited, the entered income statement is lost. For a permanent copy of this file, it must be saved to disk. To ***Save*** this file on a data disk in drive B: using the file name *INCOME*, complete the following steps:

1. Activate the command menu line by typing /.

Type: /

2. Type S to Save a file.

Type: S

The message line briefly displays:

Retrieving program. Stand by . . .

The message line next displays:

Enter the file name. (Enter A:, B:, etc. for directory.)

Typing A: and pressing <RETURN> would display a directory of the files on drive A:. Typing B: and pressing <RETURN> would display a directory of the files on drive B:.

The entry line displays:

>/Save,

3. Type B:INCOME and press <RETURN>. This saves the file on drive B: with the file name of income.

Type: B:INCOME
Press: <RETURN>

The message line briefly displays:

Saving file . . .

The message line next displays:

Returning to the main program. Stand by . . .

The file has been saved to disk.

PRINT COMMAND

After all the work involved in creating this income statement, it would be rewarding to have a printed copy in hand. This is accomplished through the use of the ***Print*** command. To print a copy of the income statement, complete the following steps:

1. Activate the command menu line by typing /.

Type: /

2. Type P to begin the Print command.

Type: P

The message line briefly displays:

Retrieving program. Stand by . . .

The message line next displays:

Enter range to be printed (or ENTER for all)

The entry line displays:

>/Print,ALL

3. The entire file is to be printed. **ALL** appears on the entry line; therefore, it need not be typed. Press the <RETURN> key to accept the default response that all of the document is to be printed.

   The message line displays:

   Enter page width (number of columns across printout)

   The entry line displays:

   >Print,ALL,80

   Press: <RETURN>

4. The default page-width setting is 80. As the income statement does not exceed 80 characters, this is a suitable setting. Press the <RETURN> key to indicate an 80-character width.

   The message line displays:

   Enter page-length (number of lines per page)

   The entry line displays:

   >Print,ALL,80,58

   Press: <RETURN>

5. The default page-length setting is 58. This income statement is 12 lines long; therefore, this is a suitable setting. Press the <RETURN> key to indicate a 58-line printout.

   The message line displays:

   Options: D=double space, S=setup, P=pause, C=contents, M=multiple copies

   The entry line displays:

   >Print,ALL,80,58,

   Press: <RETURN>

6. No special options need to be indicated for this printout. Therefore, simply press the <RETURN> key.

   The message line displays:

   Printer or Disk.

   The entry line displays:

   >Print,ALL,80,58,P

   Press: <RETURN>

7. This file is to be printed on the printer. Verify that the paper is properly aligned and that the power is turned on for the printer. As the **P** is displayed on the entry line, it need not be typed. Accept this default response by pressing the <RETURN> key.

   Press: <RETURN>

   The message line next displays:

   PRINTING ... (Press ESC to cancel).

   The message line next displays:

   Returning to the main program. Stand by . . .

The income file is printed and tangible proof of the created income statement is in hand.

ZAP COMMAND

To clear the income statement spreadsheet from the screen, the ***Zap*** command is used.

1. Activate the command menu line by typing /.

   Type: /

2. Type Z to begin the Zap command.

   Type: Z

   The message line displays:

   Clear contents? (Y or N).

   The entry line displays:

   >/Zap,

3. The screen is to be cleared; therefore, type Y to indicate yes.

   Type: Y

   The message line briefly displays:

   Clearing contents. Stand by . . .

   A blank ExpressCalc spreadsheet is displayed on the screen.

LOAD COMMAND

Some changes need to be made to the INCOME file. Restart ExpressCalc and load the INCOME file from drive B: into the spreadsheet program by completing the following steps:

1. A blank spreadsheet is currently displayed on the screen. Activate the command menu line by typing /.

   Type: /

2.	Type L to begin the Load command. The message line briefly displays: **Retrieving program. Stand by . . .** The message line next displays: **Enter the file name. (Enter A:, B:, etc. for directory.)** The entry line displays: **>/Load,**	**Type:** L
3.	To display the file having the file name **INCOME** residing on drive B:, type B:INCOME and press <RETURN>. The message line displays: **All, Part or Consolidate?** The entry line displays: **>/Load,B:INCOME,ALL**	**Type:** B:INCOME **Press:** <RETURN>
4.	The entire income statement needs to be displayed. **ALL** appears on the entry line; therefore, it need not be typed. Accept this default response by pressing the <RETURN> key to display the entire file. The message line briefly displays: **Loading file . . .** The message line next displays: **Returning to main program. Stand by . . .** The Income spreadsheet is displayed on the screen. Modifications can be made and the existing file can be overwritten or backed up. The file also could be saved under a new file name.	**Press:** <RETURN>

QUIT COMMAND

This exercise has been completed. To return to the system prompt, the spreadsheet program must be exited. This is accomplished through the use of the ***Quit*** command. Complete the following steps to display the A> prompt on the screen:

1. Activate the command menu line by typing /. **Type:** /

2. Type Q to begin the Quit command. **Type:** Q

   The A> prompt is displayed on the screen

AN INTRODUCTION TO WORD PROCESSING

The most popular applications software used on microcomputers is a word processor. A word processor is used in place of a typewriter. Any letter, memo, report, brief, or other typewritten material is easier to prepare with word processing. Once you have used a good word processor, you will be very reluctant to sit at a typewriter other than when addressing a single envelope or when filling out a printed form.

The most elemental difference between a word processor and a typewriter becomes apparent with the initial draft of a document. Unlike a typist, the computer user does not think about line location or listen for a bell in order to decide whether to finish a word. The computer will automatically move a word down to the next line when the right margin has been reached. The only time you strike the carriage return key is to end a paragraph.

When a typing error is made at the computer keyboard, there is no need to reach for a bottle of correction fluid. Nor is there ever a need to worry about quality appearance in a final draft. With the computer, you simply go back and correct the errors. Should you leave a letter out, insert it. If you typed the wrong letter, type the correct one directly over the wrong one. If there are extra letters, press the delete key. Furthermore, when such changes are made, the computer will reformat the text retaining paragraph alignment. The task of typing becomes infintely easier. A person with limited typing skills can become a confident and competent typist. We recommend a short course in keyboarding. Two weeks spent in learning to touch type will reap great rewards.

Easy text entry through word processing is only the beginning of increased productivity. Once a document has been put into the computer, it can be used repeatedly. Standard paragraphs can be saved, modified, and inserted. Large or small parts of a document may be moved, deleted, or duplicated to create the final document desired.

A helpful feature on many word processors is the spelling checker. After the text has been typed, a spelling program is activated. The simpler programs place a mark on any word not contained in the program's dictionary. The marked words can then be reviewed and corrected. Sophisticated spelling programs will not only mark a word that is not in the computer's dictionary but will present several possible correct spellings for the word. Spelling checkers are useful in identifying transposed letters which are easily overlooked by proofreaders. Be aware, however, that a spelling checker will not tell you that you used "to" when you should have used "two" or "too." As all are correctly spelled, they will not be marked by the program.

Word processors can print out a document in many formats. The type can be right justified or have a ragged right edge. Left margins can be set at many different places throughout the document. Pages can be numbered or unnumbered. Some word processors can include footnotes and keep the textual reference on the page with the footnote even if you later insert additional material on the page. Some word processors can put the same heading at the top of each page without your having to retype the heading for all of the pages in the document. A few word processors come with the capability of creating indexes for the document. The user marks the word or phrase that is to be included in the index and runs the index part of the program. An index is then created by listing all the page numbers for that particular word or phrase within the document.

Probably the most powerful tool of a word processor is its merge printing. Merge printing consists of combining several whole files and placing data from one file into specific locations of another. This is an extremely efficient way to handle form letters.

In selecting a word processing program, the first step is to determine what current tasks could be done better and more efficiently by using word processing. Once you have determined your current needs, you should consider the future. How will your needs change and grow? What is your ideal? Even if you cannot afford your dream system today, you should make certain that the system you obtain (both hardware and software) can grow into your ideal.

With this brief background of word processing, you are now ready to try the software package, PC-Write. We hope that this program brings a new dimension to your work life.

Enjoy, be challenged, and have fun! You will learn by doing. Mistakes must be made in order to learn to correct them.

PC-WRITE WORD PROCESSING FUNCTIONS

1. **Creating** is the process of entering a document into the word processor. This is achieved by using the editor file. After the A> prompt, type ed b:filename and press the <RETURN> key. Next press the F9 function key to create a new document.

2. **Editing** is the process of correcting errors and rewording existing text. To edit an existing document using word processing, the file must be retrieved from the floppy disk and stored in computer memory. To retrieve the document, type the same command as above, ed b:filename <RETURN>. However, you would respond by pressing the Esc key if you did not desire a backup copy or by pressing the F9 key if you wished to have a backup file on the same disk. The floppy disk still contains the originally created version until it is either replaced by the edited version or erased. Text can be changed, new text can be entered, and text can be copied and moved around.

3. **Formatting** is the alignment or positioning of the various parts of a document. Formatting includes changing margins, switching from double to single spacing, determining the number of characters per line, indicating the number of lines per page, and other placement options. By pressing the F1 function key twice, a help menu is displayed. Use the arrow keys to position the cursor on a heading in order to have a summary of various options appear on your monitor screen.

4. **Saving** is copying the working copy of the document from the memory of the computer to the disk where it can be permanently kept. Due to the uncertainties of power, this should be done periodically. Make it a habit to save your file at least every half hour or each time the telephone rings. You save your document by pressing the F1 key to enter the help menu and then by pressing the F3 function key to save the file.

5. **Printing** is the process of producing a copy of the document stored on the disk in printed form. Note that this does not erase the copy stored on the floppy disk. To print your document enter the help menu by pressing the F1 key, and then press the F7 function key to print. Make sure that the proper filename appears in the message line at the top of the screen, and then press the <RETURN> key. The print program is loaded. Press the F10 key to indicate that the printer is ready. Press the F10 key again to indicate that the document is to be continuously printed. To exit the program, press the F1 key to enter the help menu, and then press the F2 function key to quit the program.

MAIN MENU (Press Esc)

F1:System/help F3.Copy/mark F5.Un-mark F7.Paragraph F9:Find-text
F2:Window/ruler F4.Delete/mark F6.Move/mark F8.Lower/upper F10.Replace

F1:System/Help Menu

F1	F1	Help
F1	F2	Exit edit program
F1	F3	Save file
F1	F4	DOS shell
F1	F5	Change saving name
F1	F6	Switch files
F1	F7	Print a file
F1	F8	Directory
F1	F9	Stop save

F9:Find and Replace

F9	F9	Set Find text
F9	F10	Set Replace text

F2:Window/Ruler Menu:

F2	F2	Show/hide Ruler line
F2	F3	Append Ruler to a file
F2	F4	Embed Ruler into file
F2	F5	Read default Ruler line
F2	F6	Read Ruler line from file

F3.	Marks, copy "Marked" text
F4.	Delete text "Marking"
F5.	Un-mark highlighted text
F6.	Mark, move "Marked" text
F7.	Reformat para/marked text
F8.	Change case letter/mark
F10.	Replace found text

CTL MAIN MENU (Press Esc then Ctl)

cF1.Ed.ED-DIR cF3.File-insert cF5.All-marked
cF4.Un-delete cF6.Tofile/mark cF8.Right-flush cF10.Swap-find

Ctl F1.	Load/update ED.DIR
Ctl F3.	Insert file at cursor
Ctl F4.	Un-do last delete
Ctl F5.	Mark entire file
Ctl F6.	Send marked to file
Ctl F8.	Flush right line/marked
Ctl F10.	Swap "Find" w/ "Replace"

SHF MAIN MENU (Press Esc then Shf)

sF1.Fn-keys sF7.Reform sF9.Location
sF2:Merging sF4:Shareware sF8.Center

Shf F1.	Display Main Menus on/off

Shf F2:Merge Menu

Shf F2	F5	Edit merged Input record
Shf F2	F6	Stop merge
Shf F2	F7	Input merge record
Shf F2	F8	Output merge record
Shf F2	F9	Set merge file names
Shf F2	F10	Automatic repeat merge

Shf F4:Shareware Menu

Shf F4	F2	Change reg. number
Shf F4	F3	Change front message
Shf F4	F4	Write changes to ED.EXE
Shf F4	F5	Quicksoft order form

Shf F7.	Automatic reform on/off
Shf F8.	Center line/marked text
Shf F9.	Show cursor location

ALT MAIN MENU (Press Esc then Alt)

aF1:Name/file aF3:Key-record aF7:Pagebreaks aF9:To-location
aF4:Misc,-Stuff aF8.Upper-case aF10:Replace-all

Alt F1:Name/File Menu

Alt F1	F2	Set prefix
Alt F1	F3	Change logged drive
Alt F1	F4	Change directory
Alt F1	F5	Rename a file in memory
Alt F1	F6	Copy entire file to disk
Alt F1	F7	Delete a file
Alt F1	F8	Directory

Alt F9:To-Location Menu

Alt F9	F7	Move to line x/x in file
Alt F9	F8	Move to column x/x
Alt F9	F9	Move to line x/x on page
Alt F9	F10	Move to page x/x in file

Alt F10.Replace-all Menu

Alt F10	F9	Repeat replace
Alt F10	F10	Un-replace

Alt F3:Key-Record Menu

Alt F3	F2	Assign key
Alt F3	F3	Play back key sequence
Alt F3	F4	Turn Record on and off
Alt F3	F5	Define a key
Alt F3	F6	Numbers mode
Alt F3	F7	Unassign a recorded key

Alt F4:Misc-Stuff Menu

Alt F4	F2	Insert Find text
Alt F4	F3	Word count
Alt F4	F4	Mark a pair
Alt F4	F5	Convert Wordstar file
Alt F4	F6	To next non-ASCII char
Alt F4	F7	Repeat last keystroke

Alt F7:	Insert/display pagebreaks
Alt F8.	Upper case letter/marked

DOT LINES Put each dot command on one line, preceded by Alt G font character σ

..	Starts a comment line
.*	Begin reformat protection
.+	End protect from reformat
.DD	Begin footnote on page
.DB	Begin footnote entry
.DQ	Quit footnote entry
.D	Footnote entry begin/end
.DF:file	Footnote file
.DH:text	Footnote header (fence)
.DM:n	Footnote spacing
.E	Entire text begin/end
.EB	Begin entire text
.EQ	Quit entire text
.E:number	Entire text, print lines
.EL:length	Inserted text on page
.EN	Automatic page breaks on
.EA	Automatic page breaks off
.F:text	Footer line, all pages
.FL:text	Footer line, left pages
.FR:text	Footer line, right pages
.FQ	Resets to no footer lines
.H:text	Header line, all pages
.HL:text	Header line, left pages
.HR:text	Header line, right pages
.HQ	Resets to no header lines
.I:text	Index entry
.IF:filename	Index file name
.IW:number	Index entry minimum width
.IX:number	Index entry symbol space
.K:text	Table of Contents entry
.KF:filename	Table of Contents file
.KW:number	Table of contents width
.KX:number	ToC entry symbol space
.L:length	Length of page
.LB:length	Length of body text
.M:number	Set multiple line spacing
.N:number	Number for this page
.O:filename	Output file
.PL:text	Forces left page
.PR:text	Forces right page
.Q:letter	Stops a Regular font
.QQ	Stop all Regular fonts
.R:letter	Start a Regular font
.S:length	Set line spacing per inch
.T:filename	Changes the input file
.TI:filename	Insert unprocessed input
.TL:length	Inserted material adjust
.U	Keyboard input
.U:prompt	Prompt for keyboard input
.W:number	Width of header/footer
.X:number	Extra margin on all pages
.XB:length	Bottom margin
.XF:number	Extra footer left margin
.XH:number	Extra header left margin
.XL:number	Extra margin, left pages
.XR:number	Extra margin, right pages
.XT:length	Top margin

FONT CHARACTERS

Key	Code	Char	Font
Alt A	014	♫	Align Font
Alt B	002	☻	Boldface
Alt C	006	♠	Compressed
Alt D	016	►	Double Wide
Alt E	003	♥	Elite
Alt F	028	∟	Fast
Alt G	011	♂	Guide line font
Alt H	024	↑	Higher (superscript)
Alt I	021	§	Italics
Alt J	008	◘	Jade Green
Alt K	020	¶	Keep paragraph
Alt L	025	↓	Lower (subscript)
Alt M	007	•	Marine Blue
Alt N	017	◄	Number font
Alt O	019	‼	Overstrike
Alt P	005	♣	Pica
Alt Q	022	▬	Quality
Alt R	030	▲	Red
Alt S	001	☺	Second Strike
Alt T	012,15	♀☼	Hard page break
Alt U	023	↕	Underline
Alt V	004	♦	Variable
Alt W	018	↕	Double underline
Alt Y	031	▼	Yellow

UNITS OF MEASUREMENT

Unit Code	.L: .XT: .TL: .LB: .XB: .EL:	.S: @Ruler line
i	inches	per inch
c	centimeters	per cm
p	points	points
u	units	units
s	sixth inches	sixth ins.
default	sixth inches	per inch
maximum	172.6 inches	.67 inches

Examples:

@12i	Sets Ruler spacing to 12 cpi
.LB:8i	Sets body text to 8 inches/page
.S:9p	Sets 9 point line spacing

Quicksoft

PC-Write.

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Seattle, WA 98109

000	Ctl U	space	064	@	128	C acc't ,	Ç	192	Shf Alt Z	└
001	Alt S	☺	065	A	129	u acc't "	ü	193	Shf Alt X	┴
002	Alt B	☻	066	B	130	e acc't '	é	194	Shf Alt W	┬
003	Alt E	♥	067	C	131	a acc't ^	â	195	Shf Alt A	├
004	Alt V	♦	068	D	132	a acc't "	ä	196	Shf Alt F	─
005	Alt P	♣	069	E	133	a acc't `	à	197	Shf Alt S	┼
006	Alt C	♠	070	F	134	o acc't o	å	198	Shf Ctl H	╞
007	Alt M	•	071	G	135	c acc't ,	ç	199	Shf Alt H	╟
008	Alt J	◘	072	H	136	e acc't ^	ê	200	Shf Ctl Z	└
009	(tab)	○	073	I	137	e acc't "	ë	201	Shf Ctl Q	╔
010	(line feed)	◙	074	J	138	e acc't `	è	202	Shf Ctl X	╩
011	Alt G	♂	075	K	139	i acc't "	ï	203	Shf Ctl W	╦
012	Shf Alt T	♀	076	L	140	i acc't ^	î	204	Shf Ctl A	╠
013	(CR)	♪	077	M	141	i acc't `	ì	205	Shf Ctl F	═
014	Align font	♫	078	N	142	A acc't "	Ä	206	Shf Ctl S	╬
015	Alt Z	☼	079	O	143	A acc't o	Å	207	Shf Ctl N	╧
016	Alt D	►	080	P	144	E acc't '	É	208	Shf Alt N	╨
017	Alt N	◄	081	Q	145	a acc't e	æ	209	Shf Ctl I	╤
018	Alt W	↕	082	R	146	A acc't E	Æ	210	Shf Alt I	╥
019	Alt O	‼	083	S	147	o acc't ^	ô	211	Shf Alt B	╙
020	Alt K	¶	084	T	148	o acc't "	ö	212	Shf Ctl B	╘
021	Alt I	§	085	U	149	o acc't `	ò	213	Shf Ctl U	╒
022	Alt Q	▬	086	V	150	u acc't ^	û	214	Shf Alt U	╓
023	Alt U	↨	087	W	151	u acc't `	ù	215	Shf Alt J	╫
024	Alt H	↑	088	X	152	y acc't "	ÿ	216	Shf Ctl J	╪
025	Alt L	↓	089	Y	153	O acc't "	Ö	217	Shf Alt C	┘
026	(end-file)	→	090	Z	154	U acc't "	Ü	218	Shf Alt Q	┌
027	(escape)	←	091	[	155	c acc't /	¢	219	4 acc't `	█
028	Alt F	∟	092	\	156	- acc't L	£	220	5 acc't `	▄
029	Shf Ctl -	↔	093	]	157	= acc't Y	¥	221	6 acc't `	▌
030	Alt R	▲	094	^	158	t acc't P	R	222	7 acc't `	▐
031	Alt Y	▼	095	_	159	- acc't f	ƒ	223	8 acc't `	▀
032		space	096	`	160	a acc't '	á	224	a acc't /	α
033		!	097	a	161	i acc't '	í	225	b acc't /	ß
034		"	098	b	162	o acc't '	ó	226	g acc't /	Γ
035		#	099	c	163	u acc't '	ú	227	p acc't /	π
036		$	100	d	164	n acc't ~	ñ	228	S acc't /	Σ
037		%	101	e	165	N acc't ~	Ñ	229	s acc't /	σ
038		&	102	f	166	a acc't _	ª	230	m acc't /	µ
039		'	103	g	167	o acc't _	º	231	t acc't /	τ
040		(	104	h	168	? acc't ?	¿	232	F acc't /	Φ
041		)	105	i	169	[acc't `	⌐	233	h acc't /	Θ
042		*	106	j	170	] acc't `	¬	234	O acc't /	Ω
043		+	107	k	171	1 acc't 2	½	235	d acc't /	δ
044		,	108	l	172	1 acc't 4	¼	236	$ acc't `	∞
045		-	109	m	173	I acc't I	¡	237	f acc't /	ϕ
046		.	110	n	174	< acc't <	«	238	e acc't /	ε
047		/	111	o	175	> acc't >	»	239	^ acc't `	∩
048		0	112	p	176	1 acc't `	▒	240	= acc't `	≡
049		1	113	q	177	2 acc't `	▒	241	+ acc't `	±
050		2	114	r	178	3 acc't `	▓	242	> acc't `	≥
051		3	115	s	179	Shf Alt R	│	243	< acc't `	≤
052		4	116	t	180	Shf Alt D	┤	244	(acc't `	⌠
053		5	117	u	181	Shf Ctl K	╡	245	) acc't `	⌡
054		6	118	v	182	Shf Alt K	╢	246	: acc't `	÷
055		7	119	w	183	Shf Alt O	╖	247	~ acc't `	≈
056		8	120	x	184	Shf Ctl O	╕	248	% acc't `	°
057		9	121	y	185	Shf Ctl D	╣	249	. acc't `	∙
058		:	122	z	186	Shf Ctl R	║	250	& acc't `	·
059		;	123	{	187	Shf Ctl E	╗	251	/ acc't `	√
060		<	124	|	188	Shf Ctl C	╝	252	I acc't `	ⁿ
061		=	125	}	189	Shf Alt M	╜	253	* acc't `	²
062		>	126	~	190	Shf Ctl M	╛	254	# acc't `	■
063		?	127		191	Shf Alt E	┐	255	@ acc't `	

EDITING COMMANDS	KEYS
Delete	
character at cursor	Del
character to left	Bksp
word to the left	Ctl Bksp
word to the right	Ctl Esc
line beginning	Shf Ctl Bksp
line end	Ctl Enter
Insert	
blank	Ins
line boundary	Enter
Hard-Hyphen	Ctl Hyphen
Soft-Hyphen	Shf Ctl Hyphen
Hard-Space	Ctl Space
Soft-Space	Shf Ctl Space
Margins	
temporary left margin	Ctl [
temporary right margin	Ctl]
Start new line, align with text above	Shf Enter
Recording Keystrokes	
Record mode on/off	Ctl @
play back record	Grey*
Slide Text	
to left	Shf Del
to right	Shf Ins
Text Display	
print screen	Shf Grey*
refresh screen	Ctl Grey*
convert dot commands	Ctl \
Toggle	
hide/show font chars	Alt Space
Numbers mode on/off	Ctl ^
Pushright/Overwrite	Scroll Lock
Transpose	
character to the right	Shf Esc
character to the left	Shf Bksp

CURSOR MOVES	KEYS
Character	
left	Left Arrow
right	Right Arrow
Word	
previous	Ctl Left Arrow
next	Ctl Right Arrow
Line	
up one	Up Arrow
down one	Down Arrow
scroll up one	PgUp
scroll down one	PgDn
beginning	Shf Home
end	End
Margin	
to left	Home
to right	Shf End
Tab (or Margin)	
next	Tab
previous	Shf Tab
Sentence	
next	Shf Ctl Left Arrow
previous	Shf Ctl Right Arrow
Paragraph	
next	Ctl PgDn
previous	Ctl PgUp
Window	
scroll one up	Shf PgUp
scroll one down	Shf PgDn
Window Edge	
left	Shf Left Arrow
right	Shf Right Arrow
top	Shf Up Arrow
bottom	Shf Down Arrow
Page Break	
next	Shf Ctl PgDn
previous	Shf Ctl PgUp
File	
beginning	Shf Grey+ / Alt +
end	Shf Grey- / Alt -

Search	
forward once	Grey+
backwards once	Grey-
for Non-ASCII	Shf Ctl Grey*
Bookmark	
set first bkmark	Ctl Home
set second bkmark	Shf Ctl Home
jump to first	Ctl End
jump to second	Shf Ctl End

Search/Replace Wild Cards	
F2	Use current Find text
F3	Use marked text
F4	Use Hold text
F5	Letter or number
F6	Symbol or blank
F7	Any character
F8	Line boundary

Ruler Line Letters

Left Margins		Between Margins		Right Margins	
L	Left margin	A	Auto-reformat always ON	C	Center text
M	Old left margin	B	Bell ring	F	Flush right
P	Paragraph margin	D	Decimal tab	J	Justify right
Q	Old paragraph margin	N	Auto-reform. always OFF	R	Ragged right
		T	Tab stop		

PC-WRITE 2.7
BEGINNING EXERCISE

This lesson describes how to load and use the word processor PC-WRITE. The topics covered include: loading the program, creating a document, entering text, modifying text, reformatting text, moving blocks of text, using the find and replace feature, changing type styles, saving a document, printing a document, and exiting the program.

STARTING THE LESSON

1. Before the PC-Write program can be used to turn a computer into a word processor, the operating system must be loaded into the computer. If a system prompt (A>) is not present on the screen, follow the steps described in the ***Getting Started*** lesson.

Boot: the computer

2. Insert the PC-Write program diskette into drive A: and a formatted diskette into drive B:. The diskette in drive B: will be the working data disk. Any files created will be saved onto this disk.

Insert: program disk in drive A:
Insert: data disk in drive B:

3. For this lesson, everything to be typed at the keyboard will be underlined and appear in the column on the right of the page. Text appearing on the computer's screen during the course of the lesson is indicated in **bold** print.

LOADING PC-WRITE

1. At the A> prompt, type ed. (Case does not matter.)

Type: ed

Ed is the name of the ***ed***itor segment of PC-Write. Typing the ***ed*** is a command to MS-DOS telling it to load PC-Write into the computer and begin executing the program.

2. Execute the above command by pressing the carriage return key. The Return key signals to the computer that the command has been completely typed and needs to be carried out. The ***Return*** key and ***Enter*** key, if the keyboard has both, are interchangeable. These lessons will use ***<RETURN>*** to indicate that either the Return key or Enter key is to be pressed.

Press: <RETURN>

CREATING A FILE

1. After a short pause as the program loads, the PC-Write copyright information appears on the screen and the top line message reads:

File to load or create (Esc:cancel F8:dir): "work.doc"

If no other file name is designated, **work.doc** is a default file name used by PC-Write to store the document on drive A:.

2. For this lesson, a document will be created on drive B: having the file name ***EXERCISE***. To accomplish this, type B:EXERCISE in place of **work.doc** and press <RETURN>.

   Type: B:EXERCISE
   Press: <RETURN>

   A. The ***B:*** tells PC-Write that the document is to be created on drive B:.

   B. The word ***EXERCISE*** tells PC-Write the name of the practice file for this lesson.

   C. Pressing <RETURN> indicates that the command is to be carried out.

3. Upon completion of the preceding steps, the top line message reads:

   "B:EXERCISE".

   For this lesson, *create* **B:EXERCISE** by pressing the F9 function key.

   Press: F9

   When an *existing* document is to be edited, steps 1 and 2 listed above are completed. Once those steps have been executed, the top line message reads:

   Press Esc for no backup, F9 to make backup copy "B:FILENAME".

   Pressing the ***Esc*** key allows immediate editing of the indicated file. Pressing the *F9* key causes a duplicate of the existing file to be created. The file name of the backup copy is automatically assigned. For the file called ***EXERCISE***, the backup file name is ***EXERCISE.&***.

ENTERING TEXT

As a result of the above steps, a blank screen appears with a top line indicating the current status of PC-Write. The top line message reads as follows:

Esc: Menu-Push Wrap+Sp-. 99% Free. 0% Thru. Read "B:EXERCISE"

This status line indicates that the **Esc** key brings up the Main Menu, text entry is in the **Push** mode, word wrap **Wrap+** is on, and automatic spell checking **Sp-** is turned off. **99%** of the computer's memory is available for editing purposes. The cursor is located **0%** of the way through the entire document. **Read** indicates that the file has been read into memory and that no changes have been made to the file. The **"B:EXERCISE"** indicates that the file being edited is located on drive B: and is named exercise.

When entering the four-line paragraph shown on the next page, use the arrow keys to change the position of the cursor. If the space bar is used to move the cursor, blank spaces are entered into the text. The Del key and Back Space key are useful for correcting errors.

As material is typed, any word extending beyond the right margin is moved down to the next line automatically. This feature is called word wrap. When

entering text, allow the computer to use the word wrap feature. *A carriage return should not be inserted manually at the end of a line.* PC-Write moves text to a new line when the right margin is reached. However, to begin a new paragraph or to enter a short line, the Return key must be pressed at the end of the line.

Key in the following text for use in this lesson:

When I first started to learn about personal computers, I did not like them very much. You might say that I hated them. Now that I am learning how to do word processing on a computer, I know that I hate them. I do not understand how they could be useful in an office so don't ever make me use one.

Type: the underlined text at the left

THE TOP LINE MESSAGE

The top line message is used by PC-Write to communicate with the user. When the above paragraph was entered, the top line messages changed. The **% Free** and **% Thru** numbers now reflect the current memory available and the new location of the cursor within the document. The **% Free** does not change because the paragraph is small and 99% of the memory is available for additional text. If the cursor is located at the end of the document, the **% Thru** would indicate 99%. Moving the cursor around the document causes the **% Thru** to change. The **Read** which was displayed on the top line message changed to **Edit** indicating that changes have been made to the document. When the document is saved, the **Edit** message changes back to **Read**. PC-Write often uses the top line message to display and request special information.

HELP

PC-Write has built-in help screens. These displays concisely describe how to use features of the program. The help screens can be activated by pressing the *F1* key twice. This causes an alphabetical listing of help topics to be displayed on the top half of the screen. One of the topics is highlighted by the cursor and the help information for that topic is shown on the bottom half of the screen. To change the displayed help information, use the arrow keys to move the highlighted cursor to the topic of interest. To return to the document being edited, press the *Esc* key.

1. Press the F1 key twice and explore a few of the help screens. Screens of possible interest at this time are:

   Copy/move text
   Delete text
   Enhance text
   Enter text
   Shareware

Press: F1 twice

2. Use the Esc key to return to the document being edited.

Press: Esc

MOVING AROUND THE SCREEN

The arrow keys on the numeric keypad are used to move the cursor around the screen one character or line at a time. Documents longer than 24 lines are too lengthy to be shown in entirety on the screen. The up and down arrow keys are used to bring undisplayed text back into view.

The ***Home*** and ***End*** keys are located at the right of the keyboard on the numeric keypad along with the arrow keys. These keys can be used to move the cursor from one end of a line to the opposite end. The ***Home*** key positions the cursor at the left margin. The ***End*** key positions the cursor after the last character on a line.

Holding down the ***Shift*** key and pressing the ***PgUp*** key or the ***PgDn*** key moves the displayed text backward or forward a screen at a time. Holding down the Shift key and pressing the ***gray+*** key or the ***gray-*** key on the numeric keypad places the cursor at the beginning or end of a document. The PC-Write manual and built-in help screens describe other methods for moving the cursor within a document.

REFORMATTING

PC-Write has three automatic reformatting options which can be turned on and off with the ***Shift F7*** key combination (While holding down the Shift key, press the F7 key.). The three options are: word wrap off, word wrap on, and word wrap on with automatic paragraph reformatting. Turning word wrap off causes PC-Write to ignore right margin settings. If word wrap is off, a line of text continues across the screen until the Return key is pressed. Turning word wrap on causes text at the end of a line to be moved to the next line when the right margin is reached. Word wrap does not reformat a paragraph when text is edited. Automatic reformatting realigns text in a paragraph as additions or deletions are made. Text is moved automatically from line to line to stay within the indicated margins.

The top line message indicates the active reformatting option. The top line message displays **Wrap-** to indicate that word wrap and paragraph reformatting are off. The top line message displays **Wrap+** to indicate that word wrap is on and paragraph reformatting is off. The top line message displays **Para+** to indicate that word wrap and paragraph reformatting are on.

Press the Shift F7 key combination to turn on automatic reformatting. The top line message displays **Para+** indicating that reformatting is on. Pressing **ShiftF7** a second time causes the top line message to read **Wrap-**. A third press of the **ShiftF7** key combination causes **Wrap+** to be displayed on the screen. The ShiftF7 key combination is a switch which rotates the three formatting options.

Try rotating through the three possibilities by pressing the Shift F7 key combination a few times. Paragraph reformatting must be on for the next portion of the lesson. Make sure that the top line message reads **Para+** before moving on to the next section of the exercise.

Press: Shift F7

REVISING TEXT

The ease of revising existing material is one of the greatest assets of word processing. When a mistake is made in typewritten text, the whole document must be redone. Mistakes in a document created with a word processor can be corrected on the screen. The entire document or a portion of it can be reprinted. The next part of this lesson covers some text editing features in detail.

Moving Margins: The Ruler Line

The margins for the ***EXERCISE*** file are set at the ends of the ruler line. If the four lines of text in this file were to be printed, they would extend across the entire width of 8-1/2" paper. When using pica type, a left margin setting at column 6 and a right margin setting at column 72 is standard practice. Changing the margins of the ***EXERCISE*** file requires modification of the ***ruler line***.

A ruler line contains the settings for margins and tabs and normally is modified before text is entered. The ruler line can be displayed on the screen at any time by pressing the ***F2*** key. Pressing the ***F2*** key a second time, clears the ruler line from the screen.

Press the F2 key to display the ruler line. The ruler line should look like this:

Press: F2

L--+--T1----+-T--2----T----3--T-+----4T--+--T5----+-T--6----T----7--T-+--R

Each of the individual elements on the ruler line has a purpose. The upper case **L** located at the left end of the ruler line shown above, marks the location of the **L**eft margin. PC-Write automatically word wraps to the **L**eft margin setting. In this example, an upper case **R** is located at the right end of the ruler line. This is the setting for the **R**ight margin. Any words extending beyond the **R**ight margin setting word wrap to the **L**eft margin of the next line. The upper case **T** indicates a tab stop. On the default ruler line shown above, tab stops appear at 8 column intervals. Pressing the Tab key moves the cursor to the next tab stop to the right. The numbers on the ruler line indicate column numbers in multiples of 10. The hyphens are place holders and the + signs appear at columns 5, 15, 25, ...

When the ruler line appears on the screen, the top line displays a menu of ruler line commands. Some of these commands are discussed in subsequent lessons. The important thing to note now is that while the ruler line is on the screen, the right end of the top line message displays the cursor's current column location.

To create one-inch margins for the paragraph, the margin stops need to be located at columns 6 and 72. The text must then be reformatted to the new margin settings. To accomplish this, complete the following steps:

1. First relocate the left margin. Using the arrow keys, move the cursor to column 6. Moving the cursor while it is on the ruler line with any key other than an arrow key damages the ruler line. Type an upper case **L** at column 6. The capital **L** which indicated the former left margin has changed to a lower case **l**.

Position cursor: at column 6
Type: L

2. An additional step is required when relocating the left margin of *existing* text. The *former* left margin needs to be indicated on the ruler line by an upper case **M**. PC-Write does not relocate the left margin of existing text if the left margin is not aligned with this **M**. Move the cursor to column 1. Replace the lower case **l** which represents the existing left margin by typing an upper case **M**.

Position cursor: at column 1
Type: M

3. The right margin is changed by entering an upper case **R** at column 72 on the ruler line. Using the arrow keys, move the cursor to column 72 and type an upper case **R**. The capital **R** which indicated the former right margin has changed to a lower case **r**.

Position cursor: at column 72
Type: R

4. Press the F2 key. The ruler line is removed from the screen.

Press: F2

5. The paragraph is ready to be reformatted. Position the cursor anywhere on the first line of the paragraph.

Position cursor: on first line of paragraph

6. The F7 key is used to manually reformat a paragraph. Press the F7 key. The paragraph is now five lines in length rather than four.

Press: F7

Deleting Text

Text may be deleted and inserted. In the paragraph typed for this exercise, change the phrase **personal computer** to read ***microcomputer***. To do this, the word *personal* needs to be deleted and the prefix *micro* needs to be inserted.

Personal could be deleted by moving the cursor to the letter **p** and pressing the delete key eight times. However, PC-Write has a command which deletes an entire word. This command is executed by pressing the Ctrl Esc key combination. (While holding down the ***Ctrl*** key, press the ***Esc*** key.).

Delete the word personal from the first line of the paragraph by completing the following steps:

1. Move the cursor under the **p** in **personal**.

Position cursor: at p in personal

2. While holding down the Ctrl key, press the Esc key. The Ctrl Esc key combination deletes the word personal. As automatic reformatting is on, the paragraph is reformatted when the word is deleted.

Press: Ctrl Esc

Inserting Text

PC-Write supports two text entry modes. The ***Push*** mode inserts characters at the cursor and moves existing text to the right. The ***Over***write mode replaces the character at the cursor with the newly typed character. The top line message indicates the current text entry mode by displaying ***Push*** or ***Over***.

The ***Scroll Lock*** key toggles PC-Write between the *Push* and *Over* modes. Press the Scroll Lock key (located in the upper right of the keyboard) and

Press: Scroll Lock

notice that the top line message changes from **Push** to **Over**. Pressing the ***Scroll Lock*** key again changes PC-Write back to the **Push** mode.

Insert the prefix, micro, to replace the deleted word, personal, by executing the following steps:

1. Press the Scroll Lock key to enter the Push mode.

Press: Scroll Lock

2. Move the cursor directly under the **c** in the word **computers** and type micro to replace the deleted word. (Microcomputer is one word.)

Position cursor: at c in computers
Type: micro

Marking, Moving, and Copying Text

While the method described above is useful when making minor changes to the text, it does not efficiently move, copy, or delete large blocks of text. In word processing, a large section of text is called a block. PC-Write has separate commands for manipulating blocks of text. The user can mark portions of the document and then copy, move, or delete them.

Copy

The ***copy*** command is used to duplicate a block of text to another location. The original block is left unchanged. The copy command is executed by using the ***F3*** key. The cursor is moved to the first character of text to be copied, and the F3 key is pressed. The top line message indicates that **Marking** is taking place. The cursor is next moved to the end of the text that is to be copied. The F3 key is pressed again. The text is highlighted and the top line message indicates that text has been **Marked**. The last step in copying a block of text is to position the cursor at the location where the newly copied text is to appear and to press the F3 key. This location may be on a new line, in the middle of a paragraph or sentence, or in the middle of a word. If most of the text disappears from the screen, it has not been lost. The text has merely shifted out of sight. Judicious use of the Shift PgUp key combination (While holding down the Shift key, press the PgUp key.) brings the text back into view. Once the marked text has been copied, the file needs to be unmarked. This is accomplished by pressing the ***F5*** key.

In this lesson a copy of the sentence, **You might say that I hated them.**, will be placed at the end of the text.

1. To mark the beginning of the text to be copied, position the cursor under the **Y** of **You** and press the F3 key. The top line message now contains the word **Marking**.

Position cursor: at Y in You
Press: F3

2. Position the cursor *after* the **m.** in **them.** (include the period). Notice that the text being marked is highlighted. When all of the text to be copied is highlighted, press the F3 key. This marks the text. The top line message now states **Marked** and the highlight style or color has changed.

Position cursor: after m. in them
Press: F3

3. To copy the marked text, position the cursor at the location for the new copy. In this case, place the cursor after the last word in the paragraph. Press the F3 key. A copy of the marked text has been inserted at the new location.	**Position cursor:**	after last word in paragraph
	Press: F3	
4. Press the F5 key to unmark the text and exit the copy command.	**Press:** F5	
5. Examine the text, and correct any spacing problems that may have occurred when the text was copied. The most common error is having too many or too few blank spaces following a period.		

Move

The *move* command is used to relocate a block of text within a document. This command is very useful when reorganizing text. The move command is executed with the ***F6*** key. The steps in the move process are identical to the steps in the copy process except that the *F6* key rather than the *F3* key is pressed. The cursor is positioned at the first character of text to be moved and the F6 key is pressed. The top line message indicates that **Marking** is taking place. The cursor is next positioned at the end of the text that is to be moved. The F6 key is pressed again. The text is highlighted and the top line message indicates that text has been **Marked**. The last step in moving a block of text is to position the cursor at the location where the moved text is to appear and to press the F6 key. As with the copy command if some of the text disappears from the screen, using the ***Shift PgUp*** key combination brings the text back into view. When the move has been completed, the *F5* key is pressed to unmark the file.

In this exercise document move the first line; **When I first started to learn about microcomputers, I did not like them very much.**; to the end of the paragraph. After the move, this sentence appears only at the end of the document.

1. To mark the beginning of the text to be moved, position the cursor under the W of When and press the F6 key. The top line message now contains the word **Marking**.	**Position cursor:**	at W in When
	Press: F6	
2. Position the cursor *after* the **h.** in **much.** (include the period) and press the F6 key to mark the end of the text to be moved. Again notice the change in highlight style or color. The top line message states **Marked**.	**Position cursor:**	after h. in much
	Press: F6	
3. To place this sentence at the end of the document, position the cursor two spaces after the last word of the paragraph. Typing etiquette requires two spaces after a period at the end of a sentence. Press the F6 key. This moves the marked text to the new location.	**Position cursor:**	two spaces after last word in paragraph
	Press: F6	
4. Press the F5 key to unmark the text and exit the move command.	**Press:** F5	
5. Examine the text and correct any spacing problems that may have occurred when the text was moved. The most likely correction required will be the deletion of blank spaces at the beginning of the paragraph.		

Delete

The sentence, **You might say that I hated them.**, appears at two locations in the same paragraph. Delete the second occurrence of the sentence by completing the following steps:

1. Position the cursor under the **Y** of **You** in the sentence located at the end of the paragraph.

Position cursor: at Y in You

2. Mark the beginning of the sentence by pressing the F4 key.

Press: F4

3. Move the cursor to the end of the sentence and press the F4 key again. The sentence disappears from view.

Position cursor: at end of sentence

4. If too much text or the wrong text is deleted with the F4 command, the ***Ctrl F4*** key combination (While holding down the Ctrl key, press the F4 key.) restores the deleted text to the screen. Press the Ctrl F4 key combination to restore the deleted sentence. If the deleted text were to be left within the document, the ***F5*** key would be used to unmark the text.

Press: Ctrl F4

5. Press the F4 key to delete the text once again.

Press: F4

6. Correct any spacing problems that may have occurred when the sentence was deleted.

FIND AND REPLACE

The find and replace feature of PC-Write searches a document for specified text and replaces that text with a new word. This feature can be used to correct a spelling error made throughout an entire document.

The find and replace function is initiated by pressing the ***F9*** key. The text to be found is then indicated. Pressing the ***F10*** key brings a request for the replacement text. After the replacement text has been typed, pressing the Return key restores the cursor to the document. The search is begun by pressing the ***gray+*** key. The ***gray+*** key searches text located after the cursor. The ***gray-*** key searches text located before the cursor. These keys are found on the numeric keypad at the right side of the keyboard. Whenever the ***gray+*** key or ***gray-*** key is pressed, the cursor moves to the next occurrence of the text to be found. Pressing the ***F10*** key causes the replacement to occur.

In this lesson, a serious mistake was made! The word ***adore*** is appropriate. Somehow the word ***hate*** was substituted! Use the find and replace function to correct this egregious error by changing the verb ***hate*** to ***adore***.

1. To begin the find and replace operation, press the F9 key. The top line message requests that the find text be indicated. Type the word hate as the text to find.

Press: F9
Type: hate

2.	To indicate the word which is to replace the word **hate**, press the F10 key. The top line message requests that the replace text be indicated. Type the word adore as the replace text.	**Press:** F10 **Type:** adore
3.	To return the cursor to the text, press <RETURN>.	**Press:** <RETURN>
4.	To begin the search, position the cursor at the first word of the document and press the gray+ key. The cursor moves to the first **hate** appearing in the text.	**Press:** gray+
5.	To replace the highlighted word, press the F10 key. After the word has been replaced, press the gray+ key to continue the search forward.	**Press:** F10 **Press:** gray+
6.	Each time the word **hate** is highlighted, press the F10 key. The top line message indicates when the search is completed by displaying: **Did not find "hate".**	**Press:** F10
7.	Press the F5 key to exit the search and replace mode.	**Press:** F5

CHANGING TYPE STYLES

The type style of printed materials can be changed by entering the appropriate commands within the text file. PC-Write supports many different print fonts. The printer determines which type styles can be used. Some styles cannot be produced by certain printers. Dot matrix printers can produce assorted type faces without physically making changes to the printer. The print style can be changed from pica to elite to italics from within the word processing program.

Type faces are varied by inserting font characters. Type style commands are entered by holding down the ***Alt*** key and pressing the letter key associated with the type style desired. The help screen entitled ***Enhance text*** contains a list of the type faces supported by PC-Write.

To activate a new type style, the cursor is positioned at the first character of text to be printed in the new type style. The *Alt* letter key combination associated with the font desired is pressed. For instance, pressing the ***Alt I*** key combination (While holding down the Alt key, press the I key.) turns on italic type. Pressing the ***Alt B*** key combination (While holding down the Alt key, press the B key.) activates bold type.

Whenever an Alt letter key combination is entered, the symbol associated with that type style is displayed on the screen. For example, the symbol which denotes underlining is. All text on the line following a type-style symbol is printed in the indicated style. To turn off a font before the end of a line, the symbol must appear a second time. The cursor is positioned after the last character to be printed in the indicated style. Entering the ***Alt*** letter key combination again places the symbol on the screen and turns off the indicated style.

To underline the word, **adored**, which appears in the first line of the lesson paragraph, complete the following steps:

1. Move the cursor to the **a** in **adored** and press the Alt U key combination. A ↕ symbol appears on the screen. Text following the ↕ is highlighted to the end of the line indicating that the text will be underlined.

Position cursor: at a in adored
Press: Alt U

2. Move the cursor to the blank space after the word **adored** and press the Alt U key combination. The ↕ symbol appears after the word **adored** indicating that underlining is to stop there. The remainder of the text on the line is no longer highlighted and will print normally. When the paragraph is printed, the word **adored** will be underlined.

Position cursor: at first blank after adored
Press: Alt U

SAVING A DOCUMENT

Until a document is saved, any additions or alterations made to it reside only in the computer's memory. If the power fails or the computer is turned off, all additions and changes made to the document are lost. In order to have a permanent copy of a document, the file must be saved on disk. Saving a file every 15 minutes can prevent the loss of hours of work should something go wrong. Save the lesson paragraph created with PC-Write by using the ***F1, F3*** key sequence:

1. Press the F1 key to display the top line menu. Pressing the *Esc* key returns the cursor to the document and pressing the ***F1*** key a second time displays the help menu. The top line message indicates that text can be saved by pressing the ***F3*** key. The ***F3* Save** can only be accomplished when this top line menu is displayed.

Press: F1

2. Save the text by pressing the F3 key. The top line briefly displays **Writing** and the name of the file being saved. The document has been saved in its entirety when the top line message displays:

Read "B:EXERCISE".

Press: F3

PRINTING A DOCUMENT

Printing a document with PC-Write is accomplished through the use of the ***F1 menu*** and the selection of ***F7* to print a document**. PC-Write supplies the name of the file currently being edited as the file to be printed. Most of the time, this is the file that the user wishes to print. This file may be selected by pressing the Return key. However, any file name may be keyed in at this time in order to have the specified file printed.

The top line next displays:

F10:printer is ready.

If the printer is ready, the ***F10*** key is pressed and the print menu appears.

If the *F10* key is pressed and the printer is not ready, the top line message will read:

Waiting. Print from "B:EXERCISE" to "PRN" ready to begin.

When the printer is properly turned on, the print menu appears.

Upon completion of the above steps, a full-screen print menu appears. If single sheet paper is used, the *F9* key is pressed to print each page. The printer waits for a new sheet of paper to be inserted after printing each page. If continuous-form computer paper is used, the *F10* key is pressed to automatically print the entire document. After the file is printed, the document being edited prior to the print process reappears on the screen.

To print the paragraph created during the course of this lesson, complete the following steps:

1.	Press the F1 key to display the top line menu.	**Press:** F1
2.	Press the F7 key to select **print a file**. The file being edited is automatically saved before the print process begins. The save is indicated when the top line message displays: **writing "B:EXERCISE:".**	**Press:** F7
3.	The top line message next requests the name of the file to print. As **B:EXERCISE** is already indicated, press <RETURN> to select this file.	**Press:** <RETURN>
4.	The top line message now reads: **Esc:Exit F9:Print to a file F10:Printer is ready.**	
5.	Verify that the printer is turned on and that the paper is aligned. Press the F10 key when the printer is ready.	**Press:** F10
6.	An extensive menu appears on the screen. Press the F10 key to select **Continuous** print. The file is printed.	**Press:** F10

If the hard copy reads like that below, it is not a literary masterpiece. However, the lesson has been successfully completed and the user has been introduced to the basics of word processing.

You might say that I adored them. Now that I am learning how to do word processing on a computer, I know that I adore them. I do not understand how they could be useful in an office so don't ever make me use one. When I first started to learn about microcomputers, I did not like them very much.

EXITING PC-WRITE

The lesson has been completed and it is time to exit PC-Write. This is accomplished by accessing the ***F1 menu*** and selecting **F2.Exit**. When PC-Write is exited, the document is saved before PC-Write terminates.

1. Press the F1 key to display the F1 top line menu. **Press:** F1

2. Press the F2 key to exit PC-Write. The file is automatically saved before the program is exited. **Press:** F2

3. The A> prompt appears on the screen and the user is at the operating system level.

PC-WRITE 2.7
SPELL CHECKING EXERCISE

The spelling checker for PC-Write can check spelling as words are typed or check the spelling of an entire document upon completion of text entry. Words can be added to the PC-Write spelling checker master list and several personal dictionaries also can be maintained. In addition, the PC-Write spelling checker can provide suggested spellings for identified misspelled words.

Real Time Spell Checking

Spell checking can be turned on to check the spelling of words as they are typed. In this mode when a word is entered which is not recognized by PC-Write, a beep sounds. Turning on the spelling checker is a two step process. First, the spell checking menu line must be displayed. Next, the Autocheck feature needs to be selected from the menu.

1. Insert the PC-Write diskette in drive A: and a data diskette in drive B:.

Insert: program disk in drive A:
Insert: data disk in drive B:

2. Load PC-Write and indicate a file on drive B: called SPELTEST. At the A> prompt, type ed b:speltest <RETURN>. Press the F9 key to create the file.

Type: ed b:speltest <RETURN>
Press: F9

3. Press the Alt F2 key combination. **Loading master word list, wait...** is displayed at the top of the screen. After the word list has been loaded into memory, the following menu line displayed:

Press: Alt F2

```
Esc F1 F2.Check F3:Guess F4:Add-word F5:Load-list F6:Save-list F7:.Auto± Grey±
Cancel this menu (use left/right arrows to select other options)
```

4. Select Automatic spell checking by pressing the F7 key. The top message line now contains Sp+ on the left center of the screen.

Press: F7

5. To test the spelling checker, type:

Type: Thes is a teast of the speling cheker.

Thes is a teast of the speling cheker.

A beep should have sounded when the space bar was pressed following the words Thes, teast, and speling. A beep also should have sounded when the period after cheker was typed. If additional mistakes were made when entering the sentence, other beeps occurred as well. These beeps can become annoying. If such is the case, automatic spell checking can be turned off. To turn off spell checking, repeat steps 3 and 4 above. The status of automatic spell checking is displayed on the top message line. Sp+ indicates that autocheck is on. Sp- indicates that autocheck is off.

Spell Check a Document

Three steps are required to check the spelling of an existing document. First, the cursor is moved to the beginning of the document. Second, the spell checking menu line is displayed. Third, the gray+ key is pressed to begin the spelling check. The first word not recognized by PC-Write is highlighted and the appropriate action is chosen from the menu. To move the cursor to the next misspelled word, the gray+ key is pressed.

Spell check the sentence, **Thes is a teast of the speling cheker.**, by completing the following steps:

1.	Move the cursor to the top of the file by pressing the Shift+ key combination. (While holding down the Shift key, press the gray+ key.)	**Press:** Shift+ key combination
2.	Activate the spell checking menu by pressing the Alt F2 key combination.	**Press:** Alt F2
3.	Start the spelling check by pressing the gray+ key. The word Thes is highlighted on the screen.	**Press:** gray+ key
4.	Press the gray+ key three more times to highlight the three other misspelled words.	**Press:** gray+ key 3 times
5.	Press the gray+ key once more. This causes **Spelling check done [press any key]** to be displayed across the top of the screen. This message indicates that there are no more misspelled words in the document.	**Press:** gray+ key
6.	Press any key to exit the spell checking mode.	**Press:** any key

Suggested Correct Spellings

The PC-Write spelling checker can suggest possible spellings for words which it does not recognize. This feature is available from within the autocheck mode or from within the document checking mode. In either mode, the F3:Guess option is selected from the spell checking menu. For PC-Write to suggest alternative spellings from within the autocheck mode, the user must press the Alt F2 key combination to activate the spell check menu before the guess option can be selected. When a correct spelling is proposed, it can be used to replace the misspelled word.

Complete the following steps to use the guess feature from within the document checking mode:

1.	Move the cursor to the beginning of the file by pressing the Shift+ key combination.	**Press:** Shift+ key combination
2.	Activate the spell checking menu by pressing the Alt F2 key combination.	**Press:** Alt F2

3.	Begin the spelling check by pressing the gray+ key. The word Thes is highlighted on the screen.	**Press:** gray+ key
4.	Ask PC-Write to suggest the correct spelling for the word **Thes** by pressing the F3 key. The suggested word, **thesaurus**, is displayed on the top message line. Clearly, this is not the desired word.	**Press:** F3
5.	Press the F3 key for another suggestion. The suggested word, **thesauruses**, is displayed on the top message line.	**Press:** F3
6.	Continue pressing the F3 key until the word **this** is displayed.	**Press:** F3 until the word this appears
7.	Press the F10 key to replace **thes** with **this**.	**Press:** F10
8.	Press the gray+ key to position the cursor at the next misspelled word, **teast**.	**Press:** gray+ key
9.	As in step 4, press the F3 key to request PC-Write to provide suggestions for the correct spelling. Continue pressing the F3 key until the correct spelling, **test**, is displayed.	**Press:** F3 until the word test appears
10.	When test is displayed, press the F10 key. This replaces the misspelled word, **teast**, with the word, **test**.	**Press:** F10
11.	Press the gray+ key to move the cursor to the next misspelled word, **speling**.	**Press:** gray+ key
12.	Use the F3 key to request suggestions as to the correct spelling. PC-Write does not propose the word spelling. Eventually the message, **Cannot guess word [press any key]**, is displayed.	**Press:** F3 until Cannot guess word [press any key] appears
13.	Press the space bar to clear the message from the screen.	**Press:** space bar
14.	Press the Esc key to clear the spell check menu from the screen.	**Press:** Esc key
15.	Any misspelled word highlighted by PC-Write can be corrected manually. Manually correct the word speling to spelling. A. Position the cursor under the l of the word speling. B. Type l.	**Position cursor:** under the l of the word speling **Type:** l
16.	To verify that the word which was corrected in step 15 is spelled correctly, press the Alt F2 key combination to activate the spell check menu.	**Press:** Alt F2

17. Press the F2 key to request PC-Write to Check the spelling of the word, spelling. The message, **found in master word list: "spelling"**, is displayed.

Press: F2

18. Persistent users who repeat the above steps to look at all of the suggestions for the replacement of the word, **cheker**, discover that PC-Write is unable to propose the correct spelling. Manually correct the spelling of this word to checker.

A. Press the Esc key to cancel the Guess option request.

Press: Esc key

B. Press the Esc key to clear the spell check menu from the screen.

Press: Esc key

C. Position the cursor under the k of the word cheker and type c.

Position cursor: under the k in the word cheker

Type: c

Add a Word to the Dictionary

The dictionary used by PC-Write is comprehensive but does not contain all of the words required by a user. Often proper names and specialized terms are not included in the dictionary. When PC-Write is in the autospell mode and a word not in the dictionary is typed, a beep sounds. When PC-Write is in the document check mode and a word not in the dictionary is identified, the cursor stops.

Additional words can be included in a user-created dictionary named WORDS.USE. This user dictionary is automatically activated when the F2 key is pressed from within the spell check menu. To permanently include a word in the user dictionary, the WORDS.USE dictionary file must be saved.

Complete the following steps to add a word to the user-created dictionary.

1. Type the word winchester. This causes the automatic spelling checker to beep. This word is not in the PC-Write dictionary.

Type: winchester

2. To add this name to the dictionary, press the Alt F2 key combination to display the spell check menu. Press the F4 key to select **Add-word** from the menu. The screen displays:

Press: Alt F2
Press: F4

Add word to user list (Esc:cancel): "winchester"

3. Press the <RETURN> key to accept the displayed word. The cursor returns to the document.

Press: <RETURN>

4. To save the added word as part of the WORDS.USE dictionary, press the Alt F2 key combination to display the spell check menu.

Press: Alt F2

5. Press the F6 key to select **Save-list** to save the current list. The screen displays:

Press: F6

Save word list to file (Esc:cancel F8:dir): "words.use"

6. Press <RETURN> to save the user-created dictionary with the file name WORDS.USE. This dictionary is loaded automatcally when spell checking is activated.

Press: <RETURN>

7. Press the Esc key to clear the spell check menu from the screen.

Press: Esc key

In the future when words are added to the list and saved, PC-Write indicates that the file exists and asks if it should be replaced. In most cases, the reply will be yes to include the most recently indicated words in the user-created dictionary. Yes is indicated by pressing the F9 key.

DATA BASE MANAGEMENT

A data base is an orderly collection of one or more related files. This usually means a collection of files stored on a disk and accessed through a computer. A data base management system (DBMS) is a software system that creates, maintains, and manipulates the data base, and permits the execution of computer programs to access the information contained on the data base.

A relational data base organizes data into simple tables called relations. Such software allows users to create reports by drawing data from multiple tables. This provides a simplicity and flexibility of use not easily obtained in nonrelational data base (file management) systems.

POTENTIAL DATA BASE EDUCATIONAL APPLICATIONS

1. Keeping and reporting many kinds of student records
   Longitudinal academic records, home addresses, attendance

2. Keeping track of school inventories of all types
   Parts, supplies, materials, tools, textbooks

3. Maintaining mailing lists

4. Teaching electronic record keeping to students

5. Keeping data to perform educational research

FUNCTIONS OF A DATA BASE MANAGEMENT SYSTEM

1. Creating/defining the data base assigns disk storage to hold the data base and involves describing the data base in terms of files (relations) and the fields within each file. Each field must be described in terms of the name of the field, type of field (numeric or character), length, and precision.

2. Adding data to the data base involves putting data into the fields that have been defined.

3. Editing data in the data base involves being able to change data in a data base and which must be modified.

4. Sorting the data involves putting the data in some significant sequence . . . alphabetic by name, numeric by part number, so that eventual reports are more easily read.

5. Searching the data involves looking through the file to find the record or records that meet some predetermined characteristics (e.g. find all records in which Age>25 and Weight <150 or Sex = 'F'.

6. Reporting items from the data base involves creating a listing of items from the data base either on the screen or on the printer.

DATA BASE DEFINITIONS

Tuple or Record - each row of data containing data about one employee, or customer, or whatever the data is about

Relation - a collection of tuples or records

Attributes - columns in a relation containing data that describes relations (e.g. name, age, dept., ID number)

Flat File - a file with only two dimensions (rows and columns) is called a flat file

Field - a subdivision of a record that contains information that can be treated as a whole (e.g. a name field, an address field); each record within a flat file has the same number of fields, even if some are blank

Key - column in a relation containing data that uniquely identifies the record

PC-FILE+ Beginning Exercise

This lesson describes how to load and use the data base management program PC-File+. The topics covered include: creating a data base, entering records, displaying records, finding a record, modifying a record, sorting a data base, printing a report, and printing mailing labels.

STARTING THE LESSON

1. Before the PC-File+ program can be used to turn a computer into a data base manager, the operating system must be loaded into the computer. If a system prompt (A>) is not present on the screen, follow the steps described in the Getting Started lesson.

Boot: The computer

2. Insert the PC-File+ program diskette into drive A: and a formatted diskette into drive B:. The diskette in drive B: will be the working data disk. Any data files created will be saved onto this disk.

Insert: PC-File+ program diskette into drive A: and a formatted diskette into drive B:

3. For this lesson, everything to be typed at the keyboard will be underlined and appear in the action column at the side of the page. Text appearing on the computer's screen during the course of the lesson `is indicated in prestige type.`

LOADING PC-FILE+

Before a data base can be created, PC-File+ must be loaded into the computer and the location of the data files indicated. This is accomplished by completing the following steps:

1. At the A> prompt, type PCF. (Case does not matter.)

Type: PCF

Typing PCF tells MS-DOS to load PC-File+ into the computer.

2. Press the <RETURN> key to execute the above command.

Press: <RETURN>

The Return key signals to the computer that the command has been completely typed and needs to be carried out. The Return key and Enter key, if the keyboard has both, are interchangeable. These lessons will use <RETURN> to indicate that either the Return key or Enter key is to be pressed.

The screen displays the PC-File+ copyright notice. The bottom of the screen contains:

```
Please reply
Which drive for the Database (A-Z)>                    <
```

PC-File+ must know where the data files are to be stored. This information is being requested at this point.

3. The data base for this exercise is to be created on drive B:. Type B between the brackets.

Type: B

The screen displays:

```
Please reply
What path for the data?>                                <
```

This question refers to a subdivision on a hard disk drive. This exercise does not include directions on using this option.

4. Skip this entry by pressing the <RETURN> key.

Press: <RETURN>

The screen displays:

```
We'll need to define a database. Please give it a name.
Type a name
```

CREATING A DATA BASE

A data base consists of a structured collection of information. A business might keep a data base of customer information. A data base structure is composed of records. A record is a group of related information. In a customer information data base, each record might consist of the customer's name, address, telephone number, and the date of the last business transaction. Each record is divided into segments called fields. In the customer data base example, each field would be used to store specific information. The customer's first name, last name, street address, city, state, and zip code would each be listed in a separate field.

Fields must be defined in order to establish a data base. A field is defined by giving it a name and by indicating the number of spaces allocated to it. A field name can be up to 15 characters long and can be typed in upper or lower case. No spaces can be used in a field name.

The data base created in this exercise could be used to keep membership records for an organization. Information on members' donations, ages, and sex is included. Seven records of 11 fields make up the membership data base. The fields are as follows:

LASTNAME: This field is 15 characters long and is used to store a last name.

FIRSTNAME: This field is 10 characters long and is used to store a first name.

TITLE: This field is 5 characters long and is used to store a form of address such as Miss, Mrs., Ms., Mr., or Dr.

STREET: This field is 25 characters long and is used to store a street address.

CITY: This field is 15 characters long and is used to store a city name.

STATE: This field is 2 characters long and is used to store a state postal abbreviation.

ZIP: This field is 6 characters long and is used to store a zip code. Six characters provide enough space for the entry of a Canadian zip code.

AMOUNT#: This field is 10 characters long and is used to indicate the amount of the last donation made to the organization. This field name ends with the special character #. A # indicates to PC-File+ that the entry is a number which can be manipulated arithmetically. Defining a numeric field permits the calculation of subtotals and totals.

SEX: This field is 1 character long and is used to indicate the sex of the person.

AGE#: This field is 3 characters long (in case anyone is over 99 years old!) and is used to indicate the age of the person. This field is defined as numeric so that people over a given age can be properly identified.

HOBBIES: This field is 25 characters long and is used to store a list of hobbies.

Create a data base called DISNEY containing the fields described above by completing the following steps:

1. To name the data base Disney, type Disney between the brackets and press the F10 key.

   Type: Disney
   Press: F10

   The screen displays:

```
B:\Disney is a new file.

 Please reply
Do you want to define it?  Y/N >Y<
```

2. A **Y** appears between the brackets. This is the default response and a Y does not need to be typed. Press the <RETURN> key to accept the Yes default response.

Press: <RETURN>

The screen displays:

```
There are 2 ways to define a database:

Fast:
   You provide the field NAMES, then
   you provide the field LENGTHS.
   I design the screen.
Paint:
   You DRAW the screen layout.
   This is the most flexible method.
```

```
Please reply
Enter  F(Fast) or P(Paint)  F/P>F<
```

3. An **F** appears between the brackets. This is the default response and an F does not need to be typed. Press the <RETURN> key to accept the `Fast` default response.

Press: <RETURN>

The monitor displays the field naming screen.

4. Define the data base by entering field names as indicated below. Press the *<RETURN>* key after typing the information in each bracketed area to position the cursor at the next set of brackets. If a typing error is made, the *arrow keys* are used to move the cursor to the proper location for editing. Remember to press the *Shift 3* key combination to obtain the # symbol.

Enter the field names in the locations shown below:

```
Enter the field NAMES in their relative positions
You can place the names anywhere on the screen.
```

[LASTNAME]	[ ]	[ ]	[ ]	[ ]
[FIRSTNAME]	[ ]	[ ]	[ ]	[ ]
[TITLE]	[ ]	[ ]	[ ]	[ ]
[STREET]	[ ]	[ ]	[ ]	[ ]
[CITY]	[ ]	[ ]	[ ]	[ ]
[STATE]	[ ]	[ ]	[ ]	[ ]
[ZIP]	[ ]	[ ]	[ ]	[ ]
[AMOUNT#]	[ ]	[ ]	[ ]	
[SEX]	[ ]	[ ]	[ ]	
[AGE#]	[ ]	[ ]	[ ]	
[HOBBIES]	[ ]	[ ]	[ ]	
[ ]	[ ]	[ ]	[ ]	
[ ]	[ ]	[ ]	[ ]	
[ ]	[ ]	[ ]	[ ]	
[ ]	[ ]	[ ]	[ ]	

```
Please respond. Press (F10) when complete.
```

Type: Underlined field names as shown at left

5. When the entries have been correctly made, press the F10 key. In PC-File+, the F10 key is pressed to indicate that a task has been completed.

Press: F10

The monitor displays the field length entry screen.

6. Enter the field lengths shown below:

```
Enter a length (1 - 65) for each field
The ''superfield'' maximum size for this database is 865

LASTNAME    [15]
FIRSTNAME   [10]
TITLE       [5 ]
STREET      [25]
CITY        [15]
STATE       [2 ]
ZIP         [6 ]
AMOUNT#     [10]
SEX         [1 ]
AGE#        [3 ]
HOBBIES     [25]
```

Type: Underlined field lengths as shown at left

7. Press the F10 key when the entries have been correctly made.

Press: F10 when done

The screen displays:

```
                The fields will be accessed from top to bottom
                in the first column, then the next column, etc.
 LASTNAME     Please reply
FIRSTNAME     Would you like to change this sequence?  Y/N>N<
    TITLE
   STREET
     CITY
    STATE
      ZIP
  AMOUNT#
      SEX
     AGE#
  HOBBIES
```

8. Press the <RETURN> key to accept the No default response. PC-File+ permits the user to change the data entry sequence. Selecting Yes at this point would begin that process.

Press: <RETURN>

The data base is created and the screen displays the opening menu.

ENTERING NEW RECORDS

The PC-File+ opening menu is displayed on the screen:

```
                          PC-File+

                The current file is B:DISNEY
          There are 0 records, in unsorted sequence
     This disk can hold approximately nnnn more records

          F1 A - Add a new record

          F8 U - Utilities
          F9 M - Menu of smart keys

     (Alt)F8 T - Teach mode  on/off
     (Alt)F9 Q - Quit this database
     (Alt)H    - HELP

 Please reply
Type a command, or press a function key F
```

This menu is a limited function menu because there are no records in the data base. Menu options are selected by pressing the function key associated with the activity or by typing the one-letter code associated with each activity.

This screen indicates that the data base is located on drive **B:** and has the file name **Disney**. Approximately **nnnn** more records can be added to the data base and there are currently **0** records in the data base. The number represented by the **nnnn** is dependent upon the size of each record and the space available on the disk where the data is stored.

Once the data base is defined, the information for each individual is entered by selecting **F1 A - Add a new record** from the menu. When all the information concerning one individual has been entered, the record is saved by pressing the *F10* key. After all of the records are entered, pressing the *F10* key when an empty record is displayed ends the record entry process.

Enter the first record into the data base by completing the following steps:

1. To select the **Add a new record** option, press the F1 key.

   Press: F1

   The screen displays:

```
Record number 1                                                    A
 LASTNAME [                ]
FIRSTNAME [           ]
    TITLE [      ]
   STREET [                          ]
     CITY [                ]
    STATE [  ]
      ZIP [       ]
  AMOUNT# [           ]
      SEX [ ]
     AGE# [   ]
  HOBBIES [                          ]

Please respond. Press (F10) when complete.
```

   The cursor is located at the first blank in the LASTNAME field.

2. Enter the last name of the first person in the data base. Type Charming and press the <RETURN> key.

   Type: Charming
   Press: <RETURN>

   If an error is discovered before the Return key is pressed, use the *arrow keys* or the *Back Space* key to move the cursor to the mistake and correct it. If an error is not discovered until after the Return key is pressed, use the *up arrow* key to move the cursor to the LASTNAME field and then make the necessary corrections.

3. Verify that the cursor is positioned at the first blank in the FIRSTNAME field. Type Prince and press the <RETURN> key. Make needed corrections as described in step 2.

   Type: Prince
   Press: <RETURN>

4. Enter the remaining data for the first record so that it corresponds to that below:

```
Record number 1                                                    A
═══════════════════════════════════════════════════════════════════
 LASTNAME [Charming        ]
FIRSTNAME [Prince     ]
    TITLE [Mr.  ]
   STREET [42 Wanderlust Lane        ]
     CITY [Forest Grove    ]
    STATE [MN]
      ZIP [55555 ]
  AMOUNT# [10.00      ]
      SEX [M]
     AGE# [30 ]
  HOBBIES [riding, singing, jousting]
```

Type: Underlined data as shown in the record at left.

5. Press the F10 key to save the record.

Press: F10

The screen displays:

```
┌ Please reply ═══════════════════════════════
│ O.K. to ADD? Y,N,or X(stop asking)>Y<
└─────────────────────────────────────────────
```

Read this complete paragraph before proceeding. Three choices are available. If there is an error in an entry, type **N** (for no) and press the <RETURN> key. Using the arrow keys, move the cursor to the error and correct it. If the data is correct, type **X** and press the <RETURN> key to save the record and request PC-File+ not to stop at this screen any longer. If an **X** is indicated, PC-File+ goes directly to the next record when the F10 key is pressed. Only excellent typists should respond by typing an **X**. Most users will want the opportunity to respond with an **N** or a **Y**. If the data is correct, type **Y** (for yes) and press the <RETURN> key. When a **Y** is indicated, the record is saved and PC-File+ continues to provide the **O.K. to ADD?** prompt after every record entry.

Make any necessary corrections and press the <RETURN> key to accept the default **Yes** response to enter this record into the Disney data base.

Type: Any needed corrections
Press: <RETURN>

6. Once a record is saved, a blank record is displayed on the screen. Using the process described in steps 2 through 5 above, enter the following six records into the Disney data base:

(Remember to press the F10 key to save a record and display the next record entry screen.)

```
Record number 2                                                    A
═══════════════════════════════════════════════════════════════════
 LASTNAME [White           ]
FIRSTNAME [Snow       ]
    TITLE [Miss ]
   STREET [10 Wooded Lane            ]
     CITY [Forest Grove    ]
    STATE [MN]
      ZIP [55555 ]
  AMOUNT# [10.00      ]
      SEX [F]
     AGE# [25 ]
  HOBBIES [singing, hiking, cooking ]
```

Enter: Record as shown at left and records on following pages

```
Record number 3                                                    A

 LASTNAME [Duck           ]
FIRSTNAME [Donald    ]
    TITLE [Mr.  ]
   STREET [1 Main Street            ]
     CITY [Disneyland     ]
    STATE [CA]
      ZIP [94000 ]
  AMOUNT# [15.00      ]
      SEX [M]
     AGE# [75 ]
  HOBBIES [traveling, gardening ]

Record number 4                                                    A

 LASTNAME [Duck           ]
FIRSTNAME [Daisy     ]
    TITLE [Ms.  ]
   STREET [111 Quacker Ave.         ]
     CITY [Big Rapids     ]
    STATE [MI]
      ZIP [49307 ]
  AMOUNT# [10.00      ]
      SEX [F]
     AGE# [72 ]
  HOBBIES [cooking, traveling ]

Record number 5                                                    A

 LASTNAME [Goofey         ]
FIRSTNAME [         ]
    TITLE [Mr.  ]
   STREET [13 Dogwood Dr.           ]
     CITY [Anaheim        ]
    STATE [CA]
      ZIP [94000 ]
  AMOUNT# [50.00      ]
      SEX [M]
     AGE# [80 ]
  HOBBIES [singing, dancing ]

Record number 6                                                    A

 LASTNAME [Mouse          ]
FIRSTNAME [Minnie    ]
    TITLE [Ms.  ]
   STREET [12 Jungle Ave.           ]
     CITY [Disneyland     ]
    STATE [CA]
      ZIP [94000 ]
  AMOUNT# [100.00     ]
      SEX [F]
     AGE# [100]
  HOBBIES [cooking, singing, dancing ]

Record number 7                                                    A

 LASTNAME [Mouse          ]
FIRSTNAME [Mickey    ]
    TITLE [Mr.  ]
   STREET [1 Dream Blvd.            ]
     CITY [Disney World   ]
    STATE [FL]
      ZIP [21212 ]
  AMOUNT# [100.00     ]
      SEX [M]
     AGE# [150]
  HOBBIES [traveling, singing ]
```

7. After record number 7 has been entered, press the F10 key without entering any data onto the screen which displays `Record number 8`.

Press: F10

The main menu is displayed on the screen:

```
                    PC-File+

        The current file is B:\DISNEY
    There are 7 records, in unsorted sequence
This disk can hold approximately 963 more records

          F1 A - Add a new record
          F2 F - Find a record

          F4 G - Global operations
          F5 L - Letter writing
          F6 R - Reports
          F7 S - Sort
          F8 U - Utilities
          F9 M - Menu of smart keys

     (Alt)F8 T - Teach mode  on/off
     (Alt)F9 Q - Quit this database
     (Alt)H    - HELP

 Please reply
 Type a command, or press a function key>F<
```

FINDING A RECORD

The records contained in a data base can be displayed on the screen using the **F2 F - Find a record** selection from the menu. The record to be displayed can be chosen by selecting the first or last record, the next or previous record, the record number, or an entire screen of records can be displayed using the gray+ and gray- keys.

To examine the records in the Disney data base, complete the following steps:

1. To select the **Find a record** option from the menu, press the F2 key. **Press:** F2

   The screen displays:

```
        How shall we locate the record?

  S.  Search for data (find)

  B.  Beginning of file (first record)
  E.  End of file (last record)
  N.  Next sequential record in file
  P.  Previous record in file
  R.  Relative record number
  +.  Browse forwards  in file (PgDn)
  -.  Browse backwards in file (PgUp)

  Q.  Quit the Find. Return to main Menu.

 Please reply
 Choose from the menu S
```

2. To display the beginning record, press the B key.

Type: B

The record for Prince Charming is displayed:

```
Record number 1                                                    F

 LASTNAME  Charming
FIRSTNAME  Prince
    TITLE  Mr.
   STREET  42 Wanderlust Lane
     CITY  Forest Grove
    STATE  MN
      ZIP  55555
  AMOUNT#  10.00
      SEX  M
     AGE#  30
  HOBBIES  riding, singing, jousting
```

```
Q
D Delete
M Modify
S new Search
E End of file
B Beginning ''
N Next record
P Prior record
R get by Rcd#
+ browse down
- browse up
Q Quit finding
```

3. To scroll through the data base one record at a time, press the N key. This causes the record for Snow White to be displayed. Pressing the P key causes the previous record to be displayed. Scroll back and forth through the data base by pressing the N and P keys.

Type: N
Type: P

4. To display multiple records, press the gray+ key. As this data base is small, all of the records are displayed on the screen. If the data base were larger, various screens of data could be displayed using the gray+ and gray- keys to scroll forward and backward through the data file.

Press: gray+ key

5. To select the quit finding option, press the Q key.

Type: Q

The main menu is displayed on the screen.

SEARCHING THE DATA BASE

One reason for using a data base and a data base management program is to be able to locate information quickly. When using PC-File+, this process is started by selecting **F2 F - Find** a record from the main menu. When the Find screen is displayed, the information being sought is typed in the field which holds that information. The F10 key is pressed to activate the search. When the information is found, the record containing the information is displayed and the user is given several options. If the correct record has been found, the search can be stopped. If the correct record has not been located, the search can be continued. If the record contains incorrect information, it can be modified. If the record no longer belongs in the data base, it can be deleted.

Finding an Exact Match

An exact match is the easiest kind of search to make. This search locates a record when the initial characters of a field are identical to the characters typed as the search criteria. An exact match search ignores case. Therefore, a search for *SMITH* finds *SMITH, Smith,* or *smith*.

To search for Snow White, complete the following steps:

1. To select the **Find a record** option, press the F2 key.

   Press: F2

   The screen displays the search menu.

2. Search for a record by pressing the <RETURN> key to select the default response **S**.

   Press: <RETURN>

   The screen displays:

```
Simple search:
  you 'fill in the blanks'
Complex search:
  you type in a formula

Please reply
S(Simple search), C(Complex search), Q(Quit) S/C/Q S
```

3. The search type desired is a **Simple search**. Press the <RETURN> key to select the default response **S** for **Simple search**.

   Press: <RETURN>

   The screen displays:

```
                                                                    F
 LASTNAME [***************]
FIRSTNAME [***********]
    TITLE [*****]
   STREET [*************************]
     CITY [***************]
    STATE [**]
      ZIP [******]
  AMOUNT# [**********]
      SEX [*]
     AGE# [***]
  HOBBIES [************************]
```

   The search data is typed in the field holding the information being sought. If a typing error is made while entering the search text, make certain that the asterisks to the right of the search criteria are replaced. If they are not replaced, the search will fail.

4. To search for Snow White, type White in the LASTNAME field and press the F10 key. (An alternative would be to type Snow in the FIRSTNAME field.)

   Locate: Cursor in LASTNAME field
   Type: White
   Press: <RETURN> F10

   After a short pause, the record for Snow White is located.

The the screen displays:

```
Record number 2                                                    F
 LASTNAME [White          ]
FIRSTNAME [Snow      ]
    TITLE [Miss ]
   STREET [10 Wooded Lane           ]
     CITY [Forest Grove   ]
    STATE [MN]
      ZIP [55555 ]
  AMOUNT# [10.00     ]
      SEX [F]
     AGE# [25 ]
  HOBBIES [singing, hiking, cooking ]
```

```
F
D Delete
M Modify
F Find (cont.)
S new Search
E End of file
B Beginning ''
N Next record
P Prior record
R get by Rcd#
+ browse down
- browse up
Q Quit finding
```

This is the record which is being sought. If this were not the record, typing **F** would continue the search for White in the LASTNAME field. If this were the last search to be performed, typing **Q** would Quit the find option and the main menu would be displayed on the screen. For the present, leave Snow White displayed on the screen.

Finding Based on Sound

Sometimes when a search is being made, the exact spelling of the search word cannot be remembered. Often, the pronunciation of the word can be remembered. The soundex search available in PC-File+ makes a search of this type possible.

The cursor is moved to the field which contains the information being sought and a **?** is typed as the first character in the field. The "sounds-like" spelling is entered and the *F10* key is pressed. This search does not always succeed but at times can be useful.

Use the soundex search to locate Prince Charming by completing the following steps:

1. To start a new search, press the S key.

Type: S

The screen displays:

```
Simple search:
  you 'fill in the blanks'
Complex search:
  you type in a formula
```

```
Please reply
S(Simple search), C(Complex search), Q(Quit) S/C/Q S
```

2. To accept the default response to perform a `Simple search`, press the <RETURN> key.

Press: <RETURN>

3. The name sought sounds like Charmmink. Verify that the cursor is positioned at the LASTNAME field and type ?Charmmink.

   (Note the "?". This signifies a "sounds-like" search. Remember that asterisks accidentally deleted must be replaced in the search field.)

Locate: Cursor in LASTNAME field
Type: ?charmmink

4. To start the search, press the F10 key.

   The computer displays the record of Prince Charming which is the name that could not be remembered. The search has been successful.

   The lower right portion of the screen reads:

Press: F10

```
F
D Delete
M Modify
F Find (cont.)
S new Search
E End of file
B Beginning ''
N Next record
P Prior record
R get by Rcd#
+ browse down
- browse up
Q Quit finding
```

Scanning a Field for a Match

Up to this point, the techniques used to find information in the data base produced positive results only if the information being sought was located at the beginning of a field. If an exact match search is made for the word singing in the hobbies field, the records which list singing as the first entry in this field would be the only records displayed. The scan search is used to examine the entire length of a field for a match. To scan search for singing in the hobbies field, a ~ character is typed as the first character of the field and then singing is entered. To search for the singers in the Disney data base, complete the following steps:

1. To begin a new search, press the S key.

   The screen displays:

Type: S

```
Simple search:
  you 'fill in the blanks'
Complex search:
  you type in a formula
```

```
Please reply
S(Simple search), C(Complex search), Q(Quit)  S/C/Q S
```

2. Press the <RETURN> key to accept the default response to perform a simple search.

Press: <RETURN>

3. Using the up arrow key, position the cursor at the first asterisk of the HOBBIES field and type ~singing.

   (Note the "~". This signifies "scan" search.)

Locate: Cursor in HOBBIES field
Type: ~singing

4. To start the search, press the F10 key.

Press: F10

5. The computer displays `Record number 1` because singing appears in the HOBBIES field. To continue the search, press the <RETURN> key.

Press: <RETURN>

6. The next record which contains singing is displayed. Continue to press the <RETURN> key until the screen displays:

Press: <RETURN>

```
Record number 7                                                    F
 LASTNAME [Mouse          ]
FIRSTNAME [Mickey    ]
    TITLE [Mr.  ]
   STREET [1 Dream Blvd.           ]
     CITY [Disney World   ]
    STATE [FL]
      ZIP [21212 ]
  AMOUNT# [100.00    ]
      SEX [M]
     AGE# [150]          ┌ Please reply ──────────────┐
  HOBBIES [traveling,    │Not found.  Press (Enter)   │
                         └────────────────────────────┘
```

7. To return to the search screen, press the <RETURN> key.

Press: <RETURN>

8. To return to the main menu, press the Q key.

Type: Q

The main menu is displayed on the screen.

MODIFYING A RECORD

Information changes. People move and get married. Prices increase and decrease. Such occurrences make correcting the data in data bases necessary. Records are modified in PC-File+ by first finding the record and then selecting the modify option from the on-screen menu.

The find procedure is used to locate the record to be modified. Once the record is found, **M** is selected to modify the record. This causes the cursor to move into the record so that changes can be made. When the changes have been completed, the *F10* key is pressed to save the modified record.

To change the zip code of those living in Anaheim, complete the following steps:

1. To select the **Find a record** option from the menu, press the F2 key. — **Press:** F2

   The screen displays:

```
How shall we locate the record?

 S.  Search for data (find)

 B.  Beginning of file (first record)
 E.  End of file (last record)
 N.  Next sequential record in file
 P.  Previous record in file
 R.  Relative record number
 +.  Browse forwards  in file (PgDn)
 -.  Browse backwards in file (PgUp)

 Q.  Quit the Find. Return to main Menu.

 Please reply
 Choose from the menu S
```

2. To select the default response **S** to Search for data, press the <RETURN> key. — **Press:** <RETURN>

   The screen displays:

```
Simple search:
  you 'fill in the blanks'
Complex search:
  you type in a formula

 Please reply
 S(Simple search), C(Complex search), Q(Quit) S/C/Q S
```

3. Press the <RETURN> key to accept the default response to perform a simple search. — **Press:** <RETURN>

4. Using the down arrow key, position the cursor at the first asterisk of the CITY field. Type Anaheim and press the F10 key to start the search. — **Locate:** Cursor in CITY field; **Type:** Anaheim; **Press:** F10

5. The record for Goofey is displayed. To modify the record, press the M key. — **Type:** M

6. Using the down arrow key, position the cursor at the ZIP field. Type 90700 as the new zip code. — **Locate:** Cursor in Zip field; **Type:** 90700

7. When the modification is complete, press the F10 key. — **Press:** F10

   The top of the screen displays:

```
Record number 5      MODIFIED                                  F
═══════════════════════════════════════════════════════════════
   LASTNAME [Goofey          ]
```

8. Press the <RETURN> key to search for another person living in Anaheim. — **Press:** <RETURN>

The screen displays:

```
Please reply
Not found.  Press (Enter)
```

Anaheim is not listed in the CITY field of any other record in the data base. Press the <RETURN> key to end this search.

Press: <RETURN>

9. The Find screen is displayed. To `Quit the Find` option and to return to the main menu, press the Q key.

Type: Q

DELETING A RECORD

Often a record must be deleted from a data base because a member resigns from the organization or a product is discontinued. Records are deleted by finding the record and then selecting the delete option from the on-screen menu.

Prince Charming has had his membership revoked because of his obnoxious behavior. To delete Prince Charming from the data base, complete the following steps:

1. To select the `Find a record` option from the menu, press the F2 key.

Press: F2

The screen displays:

```
How shall we locate the record?

S.  Search for data (find)

B.  Beginning of file (first record)
E.  End of file (last record)
N.  Next sequential record in file
P.  Previous record in file
R.  Relative record number
+.  Browse forwards  in file (PgDn)
-.  Browse backwards in file (PgUp)

Q.  Quit the Find. Return to main Menu.
```

```
Please reply
Choose from the menu S
```

2. To select the default response `Search for data`, press the <RETURN> key.

Press: <RETURN>

The screen displays:

```
Simple search:
  you 'fill in the blanks'
Complex search:
  you type in a formula
```

```
Please reply
S(Simple search), C(Complex search), Q(Quit) S/C/Q S
```

3. Press the <RETURN> key to accept the default response to perform a `Simple search`. **Press:** <RETURN>

4. The cursor is positioned at the first asterisk of the LASTNAME field. To start the search, type Charming and press the F10 key. **Type:** Charming **Press:** F10

5. The record for Prince Charming is displayed. To delete the record, type D for delete. **Type:** D

   The screen displays:

```
┌─ Please reply ──────────────┐
│ OK to delete?  Y/N N        │
└─────────────────────────────┘
```

6. To delete Prince Charming, press the Y key. **Type:** Y

   The top of the screen displays:

```
Record number 1      DELETED                                    F
═══════════════════════════════════════════════════════════════
   LASTNAME [Charming        ]
```

7. To quit the search and to return to the main menu, press the Q key. **Type:** Q

   The main menu is displayed.

SORTING THE DATA BASE

Data is entered into a data base in the order that it is received. Often the data can be better used and understood if it is arranged in another sequence. For instance, the names could be arranged in alphabetical order. If letters are sent using a bulk mailing permit, the mail must be sorted into zip code order. Customer data can be more useful if it is arranged by region. The sort command is used to rearrange the presentation sequence of the data making such options feasible.

A sort is accomplished by selecting the `F7 S - Sort` option from the main menu. The name of the field to be sorted is typed and the sequence of the sort indicated. The sort may be in ascending order (low to high, or alphabetical) or in descending order (high to low, or reverse alphabetical). When the sort is finished, reports or labels will be printed in the sorted order.

To sort the Disney data base in alphabetical order, complete the following steps:

1. To select the Sort option from the main menu, press the F7 key. **Press:** F7

   The screen displays:

```
                          Sort field #1
═══════════════════════════════════════════════════════════

   [1] LASTNAME
   [2] FIRSTNAME
   [3] TITLE
   [4] STREET
   [5] CITY
   [6] STATE
   [7] ZIP
   [8] AMOUNT#
   [9] SEX
   [10]AGE#
   [11]HOBBIES
```

2. To indicate that the data base is to be sorted by last names, type lastname as SORT FIELD #1 and press the F10 key. **Type:** lastname **Press:** F10

   The screen displays:

```
[lastname              ]  ┌ Please reply ═══════════════┐
═══════════════════════   │ Ascending or Descending (A or D) A │
1  [1] LASTNAME           └─────────────────────────────┘
   [2] FIRSTNAME
```

3. To select the default **A** (ascending) response to sort the last names in alphabetical order, press the <RETURN> key. **Press:** <RETURN>

   A <1 A appears to the left of the LASTNAME field and the top of the screen displays:

```
>                <Sort field #2
```

4. For this lesson, the sort is made only on the LASTNAME field and no secondary sorts are to be made. Therefore, press the F10 key to continue the sort procedure. **Press:** F10

   The top of the screen displays:

```
[                      ]  ┌ Please reply ═══════════════┐
═══════════════════════   │ Which drive for the work area (A-Z) B │
 1 A[1] LASTNAME          └─────────────────────────────┘
```

   PC-File+ needs to know which drive has free space to store temporary files which are necessary for the completion of the sort. The diskette in drive B: is nearly empty.

5. Press the <RETURN> key to select the default response B. **Press:** <RETURN>

   The computer quickly displays several screens. The last screen displays:

```
┌──────────────────────────────────────┐
│ The sort is running ...              │
│ Current activity: sort is complete   │
├──────────────────────────────────────┤
│ Sort keys extracted:      7          │
│     Records Sorted:       7          │
│ Index entries built:      7          │
└──────────────────────────────────────┘
   The sort fields:  (A) LASTNAME
```

   When the sort is completed, the main menu is displayed on the screen.

PRINTING A REPORT

PC-File+ prints reports in several formats. The easiest format to print is a list of all of the records in the data base. A more complex report format is used to print mailing labels. Before any report can be printed, the report form must be designed or selected by using the **F6 R - Reports** option from the main menu.

After the Report option is chosen from the main menu, the report is designed. The report form can be saved for future use. The report can be sent to the printer or to a disk file. A disk file report is useful when the data is transferred to another program or when multiple mailing labels are printed across the width of a page.

The output of the report can be placed on a new page whenever the contents of a field changes. This makes it possible to print groups of records on separate pages. The report can be created in page format, row format, free form, command, and letter format.

The row format is columnar. Field names in the report are printed across the top of the page and the data is printed in columns below the field names.

The letter format does not print field names across the top of a page and eliminates all blanks but one from the contents of fields. The letter format closes up the gaps created by blank spaces in the fields and prints the contents of the fields next to each other.

Create a list using a report format by completing the following steps:

1. To select the **Report** option from the main menu, press the F6 key.

   Press: F6

   The screen displays:

```
Which type of report would you like to produce?

  Page format      One record on each page. Field
                   names are shown beside the data.

  Row format       One record prints on each line.
                   The fields line up in columns.

  Free form        You'll ''paint'' each section of
                   the report. This is very flexible
                   but more work than the above.

  Commands         You use the report command language
                   to define every aspect. This is
                   very flexible and powerful, but
                   requires considerable planning.
```

```
Please reply
Enter  P, R, F, or C R
```

2. To select the default **Row format**, press the <RETURN> key.

Press: <RETURN>

The screen displays:

```
          Please number only the columns that you wish to print.
           Column 1 will print at the left, then column 2, etc.
 LASTNAME [  ]
FIRSTNAME [  ]
    TITLE [  ]
   STREET [  ]
     CITY [  ]
    STATE [  ]
      ZIP [  ]
  AMOUNT# [  ]
      SEX [  ]
     AGE# [  ]
  HOBBIES [  ]
```

3. The report is created by numbering the fields in the order they are to appear in the report.

To print the FIRSTNAME field in column one of the report, use the down arrow key to position the cursor at the space to the right of the FIRSTNAME field and type 1.

Locate: Cursor in FIRSTNAME field
Type: 1

4 Move the cursor to the LASTNAME, HOBBIES, and AMOUNT# fields and number them 2, 3, and 4 respectively. The screen should appear as shown below:

```
          Please number only the columns that you wish to print.
           Column 1 will print at the left, then column 2, etc.
 LASTNAME [2 ]
FIRSTNAME [1 ]
    TITLE [  ]
   STREET [  ]
     CITY [  ]
    STATE [  ]
      ZIP [  ]
  AMOUNT# [4 ]
      SEX [  ]
     AGE# [  ]
  HOBBIES [3 ]
```

Type: Underlined numbers as shown at left

5. To continue creating the report, press the F10 key.

Press: F10

The screen displays:

```
You may now enter a permanent TITLE LINE for this report.
 The title only prints on the first page of the report.
      (If you enter nothing, then a title will be
       requested every time the report is printed.)

 Please reply
```

6. Type Membership List as the title to be printed on this report and press the <RETURN> key.

Type: Membership List
Press: <RETURN>

A report work file is created.

The screen displays:

```
 Please reply
 Would you like to save this report format?  Y/N N
```

7. Assuming that this is a report format which will be used often, press the Y key to save this report format.

Type: Y

The screen displays:

```
Please reply
Enter a name for the format
```

PC-File+ is requesting a name for this report format. The name can include up to eight characters. Letters and the digits 0-9 are acceptable characters for a report file name.

8. To name this report format *MEMBERS*, type members and press the <RETURN> key.

Type: members
Press: <RETURN>

The screen displays:

```
                    REPORT MENU

Output to Printer, Screen, or Disk   P/S/D   [P]
Number of copies                      1-9    [1]
Do Detail lines?                      Y/N    [Y]
Do Subtotals?                         Y/N    [N]
Left margin (extra spaces)           0-99    [ 0]
Page length (in ''lines'')                   [ 66]
Type size (Normal/Compressed)         N/C    [N]
Remove blank lines and spaces         Y/N    [N]
Flip-data active?                     Y/N    [Y]
Print All or Selected records         A/S    [A]

Press (Esc) to return to PC-File+ menu

Please respond. Press (F10) when complete.
```

Each line of the report menu lists a report control feature. Changing the responses on this menu allows the user to change the the report features. For this exercise, the default settings displayed on the report menu will be used.

9. Verify that the paper is aligned properly and that the printer is turned on and on line. Press the F10 key to print the report.

Check: The printer
Press: F10

The title line and field headers are printed on the paper.

The screen displays record number 2, Donald Duck, and the following prompt:

```
Please Reply
Output this one?  Y,N,X, or Q Y
```

10. Replying Yes or No allows the user to print selected records. A Y response causes the record displayed on screen to be printed. An N response skips the current record and displays the next one. If either of these responses is chosen, the next record is displayed and the choices are repeated. If a Q response is made to Quit the the report, no report is printed.

In this exercise, all of the records are to be printed. Press the X key to print all of the records in the data base.

Type: X

The following report is printed:

```
                        Membership List
April 4, 1987 at 2:44 p.m.                              Page   1

FIRSTNAME  LASTNAME        HOBBIES                      AMOUNT
=========  ==============  ===========================  ==========
Donald     Duck            traveling, gardening            15.00
Daisy      Duck            cooking, traveling              10.00
           Goofey          singing, dancing                50.00
Mickey     Mouse           traveling, singing             100.00
Minnie     Mouse           cooking, singing, dancing      100.00
Snow       White           singing, hiking, cooking        10.00
                                                  ----------
TOTALS:    AMOUNT                                285.00

Printed 6 of the 7 records.

PRIMARY SORT FIELD: LASTNAME

SELECTION CRITERIA:
All records
```

The screen displays:

```
          REPORT STATUS
  Records selected:     6
The current record:     7
Records in database:    7

 Please reply
Completed.  Press (Enter)
```

The **Report Status** box indicates that 6 out of 7 records were selected. The missing record belongs to the obnoxious Prince who lost his club membership.

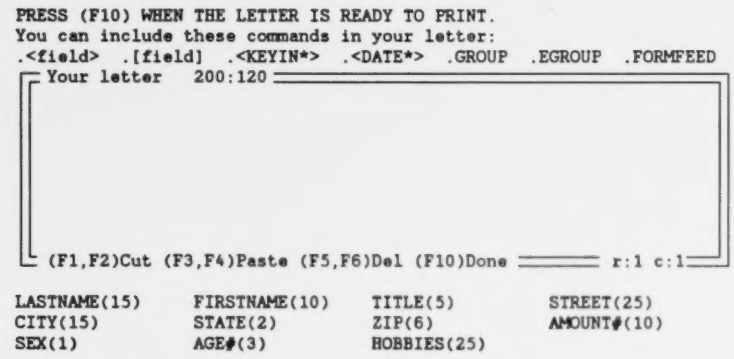
10. Press the <RETURN> key to return to the main menu. **Press:** <RETURN>

PRINTING LABELS

Labels are printed using the **F5 L - Letter writing** option. The label produced in this exercise has a first line containing the TITLE, FIRSTNAME, and LASTNAME fields. The STREET field is on the second line. The third line holds the CITY, STATE, and ZIP fields. These three lines are followed by three blank lines so that the printed labels are aligned correctly on one-inch (6 lines per inch) labels.

1. To select the **letter writing** option, press the F5 key. **Press:** F5

The screen displays:


PRESS (F10) WHEN THE LETTER IS READY TO PRINT.
You can include these commands in your letter:
.<field> .[field] .<KEYIN*> .<DATE*> .GROUP .EGROUP .FORMFEED
Your letter 200:120
(F1,F2)Cut (F3,F4)Paste (F5,F6)Del (F10)Done r:1 c:1
LASTNAME(15) FIRSTNAME(10) TITLE(5) STREET(25)
CITY(15) STATE(2) ZIP(6) AMOUNT#(10)
SEX(1) AGE#(3) HOBBIES(25)

The desired label format is entered on the displayed screen.

2. The label is to be treated as a group; therefore, the first line of the label contains the group command indicator. This command enables PC-File+ to properly print labels. Type .GROUP on the first line of the letter screen and press the <RETURN> key.

Type: .GROUP
Press: <RETURN>

3. To place field names in the letter screen; a period followed by the < symbol, followed by the field name, followed by the > symbol is typed. A space is entered between the field indicators.

The first line of the printed label is to contain the individual's title, first name, and last name.

On the second line of the letter screen, type .<TITLE> .<FIRSTNAME> .<LASTNAME> and press the <RETURN> key.

Type: .<TITLE> space
.<FIRSTNAME> space
.<LASTNAME>
Press: <RETURN>

4. To enter the street address on the second line of the printed label, type .<STREET> on the third line of the letter screen and press the <RETURN> key.

Type: .<STREET>
Press: <RETURN>

5. To enter the city, state, and zip code on the third line of the printed label, type .<CITY>, .<STATE> .<ZIP> on the fourth line of the letter screen and press the <RETURN> key.

(Note the comma which is inserted after the CITY field entry.)

Any combination of characters can be inserted when the letter writing option is being used. A line stating *personal* or *DO NOT OPEN UNTIL DEC. 25* could be included on the letter screen.

Type: .<CITY>, space
.<STATE> space
.<ZIP> space
Press: <RETURN>

6. Press the <RETURN> key three times to insert three blank lines in the label. The printed label is now six lines long and fits on a one-inch label.

Press: <RETURN> 3 times

7. Type .EGROUP R to indicate the end of the field name group. The **R** indicates that blank lines in the label are to be moved to the bottom of the label and printed.

Type: .EGROUP R

The screen displays:

```
PRESS (F10) WHEN THE LETTER IS READY TO PRINT.
You can include these commands in your letter:
.<field>  .[field]  .<KEYIN*>  .<DATE*>  .GROUP  .EGROUP  .FORMFEED
 Your letter   200:120 ═══════════════════════════════════════════════
 .GROUP
 .<title> .<firstname> .<lastname>
 .<street>
 .<city>, .<state>  .<zip>

 .EGROUP R

 (F1,F2)Cut (F3,F4)Paste (F5,F6)Del (F10)Done ═══════ r:7 c:10

LASTNAME(15)     FIRSTNAME(10)    TITLE(5)         STREET(25)
CITY(15)         STATE(2)         ZIP(6)           AMOUNT#(10)
SEX(1)           AGE#(3)          HOBBIES(25)
```

8. Verify that the entries appear as shown above. Make any necessary corrections. To indicate that the label has been designed, press the F10 key.

Type: Any needed corrections
Press: F10

The screen displays:

```
 Please reply
Save this letter to disk?  Y/N  Y
```

9. To accept the default Yes response and save this letter form to disk, press the <RETURN> key.

Press: <RETURN>

The screen displays:

```
 Please reply
Name for this letter:
```

10. To name this report format *DISLABEL*, type DISLABEL and press the <RETURN> key.

Type: DISLABEL
Press: <RETURN>

The letter file is saved and a letter work file is created.

The screen displays the **REPORT MENU**.

11. As this exercise is for illustrative purposes only, these mailing addresses will be printed on paper rather than on adhesive labels. Verify that the paper is aligned properly and that the printer is turned on and on line. Press the F10 key to print the report.

Check: The printer
Press: F10

The screen displays record number 2, Donald Duck, and the following prompt:

```
 Please Reply
Output this one?  Y,N,X, or Q Y
```

12. Replying Yes or No allows the user to print selected records. A Y response causes the record displayed on screen to be printed. An N response skips the current record and displays the next one. If either of these responses is chosen, the next record is displayed and the choices are repeated. If a Q response is made to Quit the the report, no report is printed.

In this exercise, all of the records are to be printed. Press the X key to print all of the records in the data base.

Type: X

Six labels are printed and the screen displays:

```
REPORT STATUS
┌──────────────────────────────┐
│  Records selected:      6    │
│The current record:      7    │
│Records in database:     7    │
└──────────────────────────────┘
┌─ Please reply ───────────────┐
│ Completed.  Press (Enter)    │
└──────────────────────────────┘
```

13. Press the <RETURN> key to return to the main menu.

Press: <RETURN>

14. The lesson is complete. To quit using the program, press the Q key.

Type: Q

The screen displays:

```
┌──────────────────────────────┐
│        B:\disney             │
│Records  added:      7        │
│  ''    modified:    1        │
│  ''     deleted:    1        │
└──────────────────────────────┘
┌─ Please reply ──────────────────────────────────────────┐
│Quit processing, Different file, or Resume processing? (Q,D,R) Q │
└─────────────────────────────────────────────────────────┘
```

15. Press the <RETURN> key to accept the default response Q and to exit PC-File+.

Press: <RETURN>

CONCLUSION

This lesson has briefly explored the main features of PC-File+. It is a powerful package! After mastering the basic features, do not hesitate to experiment and master some of the advanced features.